

2016-6

A Systems Framework for Development Projects and Partnerships in Eye Health Training

Diane Wallace

Technological University Dublin, diane.wallace@gmail.com

Follow this and additional works at: <https://arrow.tudublin.ie/sciendoc>

 Part of the [Optometry Commons](#)

Recommended Citation

Wallace, D. (2016) *A systems framework for development projects and partnerships in eye health training*. Doctoral thesis, Technological University Dublin, 2016. doi:10.21427/D71W40

This Theses, Ph.D is brought to you for free and open access by the Science at ARROW@TU Dublin. It has been accepted for inclusion in Doctoral by an authorized administrator of ARROW@TU Dublin. For more information, please contact yvonne.desmond@tudublin.ie, arrow.admin@tudublin.ie, brian.widdis@tudublin.ie.



This work is licensed under a [Creative Commons Attribution-NonCommercial-Share Alike 3.0 License](#)

TITLE

**A systems framework for development projects
and partnerships in eye health training**

Name

Diane Wallace, BOptom MPA

Award sought

PhD

Institution

Dublin Institute of Technology

Supervisors

Professor James Loughman; Professor Kovin Naidoo

School

School of Physics, DIT

Month and year of submission

June 2016

Declaration page

I certify that this thesis which I now submit for examination for the award of Doctor of Philosophy, is entirely my own work and has not been taken from the work of others, except in the instance where such work has been cited and acknowledged within the body of my work.

This thesis was prepared according to the regulations for postgraduate study by research of the Dublin Institute of Technology and has not been submitted in whole or in part for another award in any other third level institution. The work reported on in this thesis conforms to the principles and requirements of the DIT's guidelines for ethics in research.

DIT has permission to keep, lend or copy this thesis in whole or in part, on condition that any such use of the material of the thesis is duly acknowledged.

Signature:

Date:

Acknowledgements

I would like to acknowledge the following people who supported me on my PhD journey: my husband, for always encouraging me to keep at it when I felt like giving up; fellow MEP Researchers Aoife Phelan, Kajal Shah, Vanessa Moodley and Stephen Thompson who were a great source of moral support; my supervisors, Prof James Loughman and Prof Kovin Naidoo for their leadership, valuable input and critique at various stages of the research; Dr Reshma Sathiparsad for her input and guidance at a critical stage of my PhD journey, Carrin Martin for her meticulous editorial support and last but not least, Almighty God for giving me the intellect, patience and perseverance to complete this while juggling the challenges being a new Mother and raising 2 wonderful boys during this process.

Much love to my parents who have always believed in and supported me and to my 2 boys, Zachary and Seth, to whom I dedicate this thesis.

List of Abbreviations

BHVI	Brien Holden Vision Institute
DIT	Dublin Institute of Technology
IA	Irish Aid
IAPB	International Agency for the Prevention of Blindness
ICEE	International Centre for Eyecare Education
KI	Key Informant/s
KII	Key Informant Interviews
MEEM	Multiple Entry and Exit Model
MEP	Mozambique Eyecare Project
NGO	Non-governmental Organisation/s
OT	Ophthalmic Technician
UL	Universidade Lúrio
URE	Uncorrected Refractive Error
VI	Vision impairment
WHA	World Health Assembly
WHO	World Health Organisation

Abstract

Purpose

Development projects in eye health have evolved over the past fifteen years in response to VISION 2020: The Right to Sight. Estimates that 285 million people, mainly in the developing world, are needlessly vision impaired largely due to the lack of trained eye health professionals have moved development initiatives away from vertical, service delivery approaches towards the establishment of more sustainable, locally owned professional training programmes in an effort to ensure long term production of adequately trained human resource capacity to address this challenge.

The Mozambique Eyecare Project was one such initiative, established as a solution to the challenge of uncorrected refractive error in Mozambique. It represented a unique multi-partner development project, proposing a regional, multiple entry and exit model of training in optometry catering to Lusophone Africa's human resources for optometry need in the longer term.

Given the uniqueness of the project and its proposed developmental solution, as well as the absence of documented benchmarks for development projects and partnerships of this nature, this research was undertaken to understand the MEP's challenges, and use its experiences to inform future practices in this regard. Through this evaluative approach, the research aimed to define a systems framework for optometry development projects.

Methods

The study employed a qualitative, exploratory research design, chosen because qualitative research is not about measurement, but about understanding phenomena of interest. With critical reflection on the MEP, this study aimed to gain insight into, and identify the lessons from the MEP's experience in order to contribute to enhanced effectiveness of development interventions in optometry and eye health.

Data collection was by means of key informant interviews, using purposive sampling. Eighteen informants were interviewed based on their individual roles in the project. An interview guide was used to pursue key lines of inquiry with each participant, relevant to the areas of interest in the research. Themes emerging from the data were analysed by inductive-interpretive reasoning and where possible, was validated by means of document analysis.

Results

Research funding may act as an opportunistic driver for novel development strategies, and a catalyst for mutually beneficial project partnerships. However, one of the key drawbacks may be a mismatch between the funding cycle and the project cycle. With strong leadership and communication, shortcomings around funded support can be addressed in order to achieve a project's objectives.

Planning processes and sustainability considerations are critically important to project efficiency. In addition, situational and stakeholder analyses must be conducted, with local partners having equal input into the design and construct of training models and programme structures.

Partners would do well to avoid a hierarchical structure to the partnership and project management activities, being conscious of the need to drive a participatory approach in all its endeavours. Roles and responsibilities must be clearly articulated and language needs planned for upfront, where applicable.

Conclusion

Sustainability considerations must be factored into the planning phase of projects of this nature, so that the development investment presents long term value for beneficiaries, partners and funders. By adopting a systems approach to the design, planning and implementation of development projects in optometry, stakeholders will be guided towards increased efficiency in project output, cost containment and constructive partner relations.

List of Tables	Page
Table 1: Eye health personnel across various African regions	39
Table 2: Research Objectives and proposed outcomes	47
Table 3: WCO Global Competency Based Model	70
Table 4: Designation of interviewees included in the study	94
Table 5: Data collection process	96
Table 6: Topics of Interest	97
Table 7: Closed vs. Open-ended questions	104
Table 8: Generation of categories	115
Table 9: Initial coding framework	116
Table 10: Final coding framework	116
Table 11: Themes and sub-themes	131
Table 12: Implementing partner benefits	137
Table 13: MEP Optometry students' reported competencies in English	144
Table 14: Challenges implementing programmatic components	159
Table 15: Programme planning considerations	164
Table 16: Themes and sub-themes (Implementation)	192
Table 17: Themes and sub-themes (Partnership)	213
Table 18: Checklist on partner roles and functions	243
Table 19: Factors for effective communication within partnerships	245

List of Illustrations

Figure	Description	Page
1	Investing in health care: A “virtuous spiral”	23
2	Global estimates of number of people visually impaired by age	25
3	Distribution of blindness and vision impairment by region	26
4	Global data on vision impairments	27
5	Map of Lusophone Africa	35
6	Map of Mozambique showing Nampula in the north	37
7	The Millennium Development Goals	72
8	Research Process	92
9	Process for interpretive analysis followed in this research	112
10	Flow of data analysis	114
11	Expatriate faculty from Colombia, Spain and Portugal	119
12	The Project Management Diamond	123
13	Partnerships can facilitate research and capacity building	136
14	A classroom is converted into clinic space at UL	163
15	The Development Project Matrix	172
16	Project identity and professional identify	173
17	Partner representatives at the ‘Campaign for Quality Vision’	195
18	Map showing capital city and provinces of Mozambique	199
19	Factors supporting the development of a project’s brand	207
20	Tripartite partnership structure	220

21	Balance of power weighted in favour of external parties	230
22	Decision-making hierarchy within the project	231
23	Spectrum of association in development projects	235
24	Framework	250

LIST OF APPENDICES:

Appendix 1: MEEM Curriculum Structure

Appendix 2: Interview Guide

Appendix 3: Information Document

Appendix 4: Timeline of Events

Appendix 5: Framework Guide

‘Africa faces internationalisation not from a position of strength but from one enmeshed in weaknesses that emanate from the confluence of historical, economic, educational, financial, and paradigmatic contexts. This situation makes it more imperative—and also more arduous and more complex—to actively track the challenges, address the threats, and maximise the opportunities in internationalisation of higher education in Africa.’ (Teferra, 2015)

Table of Contents

CHAPTER 1:	21
INTRODUCTION	21
1.1 Introduction.....	21
1.2 Background	24
1.2.1 Global Burden of Vision Impairment (VI) and Blindness	27
1.2.2 The economic cost of blindness and vision impairment	31
1.2.3 Global action in support of eye health.....	34
1.2.4 Recent developments in Optometry	35
1.2.5 Profile on Lusophone Africa	37
1.2.6 Rationale for the Mozambique Eyecare Project (MEP)	40
1.3 Problem statement and motivation for the research.....	47
1.4 Aim and Objectives	48
1.5 Type of Study and Methods.....	49
1.6 Study Outcomes	51
1.7 Outline of the Thesis structure.....	51
1.8 Conclusion	54
CHAPTER 2:	55
EYE HEALTH AND DEVELOPMENT	55
2.1 Introduction.....	55
2.2 From Aid to Development	55

2.3	The Development Imperative	57
2.4	Solutions for developing countries: Who is the Innovator?	58
2.4.1	Community Engagement	59
2.4.2	Development partnerships in education	60
2.4.3	Aid Effectiveness.....	61
2.5	Eye Health Development: A historical snapshot	63
2.5.1	Investing in Human Resources for Health.....	64
2.5.2	Advocacy Frameworks	65
2.5.3	Models of Training	67
2.6	Partnerships in Eye Health Development	69
2.6.1	The Development of Schools of Optometry.....	70
2.6.2	The Mozambique Eyecare Project (MEP).....	73
2.6.3	Regional training and development collaboration.....	77
2.7	The need for a framework.....	79
CHAPTER 3:		81
A SYSTEMS FRAMEWORK.....		81
3.1	Introduction.....	81
3.2	Systems and Systems Theory	81
3.3	Systems Analysis	84
3.4	Systems approach to Development.....	85
3.5	Conclusion	86

CHAPTER 4:	87
RESEARCH METHODS	87
4.1 Introduction.....	87
4.2 Research Design	87
4.3 Research Approach	89
4.4 Research Methods.....	90
4.5 Research Process.....	93
4.5.1 Study location	94
4.5.2 Sampling.....	94
4.5.3 Data Collection	96
4.5.3.1 Designing the research tool.....	98
4.5.3.2 Interview scheduling and process	100
4.5.3.3 Conducting the interviews	100
4.5.3.4 Sourcing documents for validation	107
4.5.4 Data Management.....	109
4.5.4.1 Ethical considerations	109
4.5.4.2 Storage of data	110
4.5.5 Data Analysis.....	110
4.5.5.1 Data familiarisation.....	113
4.5.5.2 Delineating meaning units	114
4.5.5.3 Organising the data	114

4.5.5.4	Generation of categories	115
4.5.5.5	Interpretation of the results	118
4.5.5.6	Critiquing the results.....	119
4.5.5.7	Dependability and transferability of results.....	120
4.5.6	Development of a Framework	121
4.5.7	Limitations.....	122
4.6	Chapter summary	122
CHAPTER 5:		123
PLANNING FOR DEVELOPMENT PROJECTS IN EYE HEALTH:		
IMPLEMENTATION LESSONS FROM THE MEP		123
5.1	Introduction.....	123
5.2	MEEM: A developmental approach to training optometrists	128
5.3	Methods	130
5.4	Results.....	130
5.4.1	Access to funding: An opportunistic driver for development strategies	134
5.4.2	The value of networks and relationships	135
5.4.3	Nesting projects within research grants.....	136
5.4.4	Mutually beneficial partnerships	138
5.4.5	Funding cycles vs. Project cycles: Secondary development opportunities	139
5.5	Challenges implementing the project model	141
5.5.1	Absence of a thorough Situational Analysis	141

5.5.2	A perceived top-down approach.....	143
5.5.3	The existence of competing programmes.....	144
5.5.5	Linguistic factors	145
5.5.6	Planning Frameworks	147
5.5.7	Faculty Recruitment	149
5.6	Reasons behind the failure of the MEEM structure.....	151
5.6.1	Legislative Framework Changes.....	151
5.6.2	Stakeholder Analysis and Advocacy	152
5.6.3	Developing collaborative solutions	156
5.7	Project planning factors	158
5.7.1	Budget.....	158
5.7.2	Educational programme.....	159
5.7.3	Research	167
5.7.4	Project Staffing	172
5.7.5	Capacity Development	172
5.7.6	Language.....	173
5.8	Discussion.....	174
5.9	Conclusion	190
CHAPTER 6:		193
ESTABLISHING A NEW PROFESSION.....		193
6.1	Introduction.....	193

6.2	Methods	194
6.3	Results.....	194
6.3.1	Project Identity vs. Professional Identity.....	195
6.3.2	Professional Integration and sustainability.....	203
6.3.2.1	Graduate placement	203
6.3.2.2	Professional development structures	205
6.4	Discussion.....	205
6.5	Conclusion	209
CHAPTER 7:		210
PARTNERSHIP IN EYE HEALTH DEVELOPMENT PROJECTS: FACTORS FOR CONSIDERATION		210
7.1	Introduction.....	210
7.2	Methods	215
7.3	Results.....	215
7.3.1	Factors informing the relationship.....	216
7.3.1.1	North-South Development Agenda	216
7.3.1.2	Strategic opportunity.....	217
7.3.2	Partnership Operations	219
7.3.2.1	Structure of the Relationship	219
7.3.2.2	Roles and Responsibilities	221
7.3.2.3	Communication.....	224
7.3.2.4	Early Stakeholder Identification	229

7.3.5	Power Dynamics.....	231
7.3.6	Capacity Development	234
7.4	Discussion.....	236
7.5	Conclusion	248
CHAPTER 8:		
A SYSTEMS FRAMEWORK FOR DEVELOPMENT PROJECTS AND		
PARTNERSHIPS IN EYE HEALTH		
8.1	Introduction.....	250
8.2	Framework	250
8.3	Discussion.....	257
CHAPTER 9:		254
CONCLUSION.....		254
9.1	Introduction.....	254
9.3	Summary of the Results	256
9.3.1	Factors informing the design of development training models in optometry	259
9.3.2	Implementation considerations for the establishment of a new professional training programme.....	261
9.3.3	Partnership lessons for development funded projects	264
9.4	Significance of the study and contributions of this research	265
9.5	Implications of this research	266
9.6	Value of the study	267

9.7	Limitations of the study	267
9.8	Recommendations and further suggested research	272
9.9	Dissemination	272
9.10	Conclusion	274
	REFERENCES	275

CHAPTER 1:

INTRODUCTION

1.1 Introduction

This research is about the development and implementation of multi-partner projects in eye health. Multi-partner projects refer to a collaborative effort amongst several institutions or agencies in driving a specific development agenda (Bradshaw, 2000).

Development is a concept which is contested both theoretically and politically, and is inherently both complex and ambiguous. In recent years, it has taken on the limited meaning of the practice of development agencies, especially aimed at reducing poverty and addressing the Millennium Development Goals (Sumner & Tribe, 2008). It is a process involving interactions among several different components, though a common theme amongst most definitions of development is that it encompasses ‘change’, usually positive and intentional, in a variety of aspects of the human condition (Sumner & Tribe, 2008). For purposes of this research, reference will be made to development as ‘a short-medium term outcome of desirable targets, framed within a long term process of structural societal transformation’ (Sumner & Tribe, 2008).

Increasingly, government-led development agencies are working with private sector organisations in partnerships for development, and these present a win-win rationale; creating value for organisations involved, as well as for the target beneficiaries (Pfisterer, 2013). The Mozambique Eyecare Project (MEP) was conceptualised as a

long term, development solution to addressing the eye health needs of the Lusophone Africa region. It represented a unique, multi-partner institutional collaboration in a programme for the development, implementation and evaluation of a regional, adapted model of training in optometry, based in Mozambique.

Launched in February 2009, the MEP was the first Portuguese-language optometry programme on the African continent. It aimed to initially serve the optometry training needs of Mozambique, and eventually all of Lusophone Africa which included Angola, Sao Tome e Principe, Cape Verde and Guinea Bissau. While the project's objectives were multi-faceted, including components such as service development and the establishment of mutual learning networks, core to its activities was the establishment of an institutionalised undergraduate training programme in optometry for a linguistic region previously un-reached by global advancements in professional optometry development.

Using the MEP as a case study, this research sought to investigate and critically analyse aspects relating to the design, planning and implementation of this development project; as well as strategies around partnership formation and operational management of, and within, partnerships for eye health development. The research ultimately sought to draw lessons from this case study in order to establish a framework for potential stakeholders in eye health including funders, governments, institutions of higher learning and development organisations; to inform the establishment of similar projects in future and guide them towards successful implementation and projected outcomes.

Evaluation can be defined as the objective assessment of a project or programme at all of its stages, i.e. planning, implementation and measurement of outcomes (Kusek & Rist, 2004). Evaluation can further be described as a structured process of assessing the success of a project or programme in meeting its objectives, by reflecting on the processes and outcomes in answering questions, particularly related to its effectiveness or efficiency (Hughes & Niewenhuis, 2005). When the accomplishments or effectiveness of a project or programme are examined in an empirical manner, this is termed evaluation (Patton, 1990). Programme evaluation has become an essential organisational practice in public health (Center for Disease Control and Prevention, 2015).

New projects often experience implementation challenges (Joseph, et al., 2011) (Schultz, et al., 2011). Lessons learned through research helps organisations identify if a specific approach needs to be modified, and informs others on how to avoid the same pitfalls. The aim of project or programme evaluations is to provide useful information so that the applied knowledge can help improve the implementation, quality and effectiveness of future interventions, including contributing to making society more healthy (Posavac & Carey, 1997). Implementation evaluations therefore seek to identify the practical lessons that can be learned from putting a new project into action (The Retirement Research Foundation, 2015). This research therefore used an evaluative approach to identify factors for success or failure in the design, planning and implementation of development projects in optometry using the MEP as a case study.

The terms ‘project’ and ‘programme’ are sometimes used interchangeably, but each have specific, defined meanings. For purposes of clarification, a project typically relates to a set of specific activities within a set timeframe, while a programme generally has a broader scope, and may consist of several ongoing projects within a broader timeframe (Evaluation Toolbox, 2010). The MEP represented a five year project within a broader programme for optometry development in Lusophone Africa.

This chapter will present a background to the study by reviewing the global and local contexts of the burden of uncorrected refractive error (URE) as a precursor to the development of eye health services in areas of need, highlighting the project-specific context. It will further articulate the rationale for the research study as well as outline its aim and objectives. The study design and research methods utilised will be outlined, and the chapter will conclude by presenting the intended study outcomes and an outline of the structure of the thesis, giving a brief description of the contents of each chapter.

1.2 Background

Almost four decades ago, the International Conference on Primary Health Care (1978) affirmed that health, as a fundamental human right, is an important social goal requiring the action of many sectors, including the development sector, to address health inequalities between developing and developed countries. The positive correlation between health and income per capita is one of the best-known relations in international development (Bloom & Canning, 2000) and has commonly been thought to reflect a causal link from income to health, where higher income gives

greater command over many of the goods and services that promote health such as better nutrition, access to safe water, sanitation and good quality health services (Working Group 1 of the Commission on Macroeconomics and Health, 2002). However, anecdotal evidence suggests that there is also a ‘reverse’ causal link between health and income as shown in figure 1.

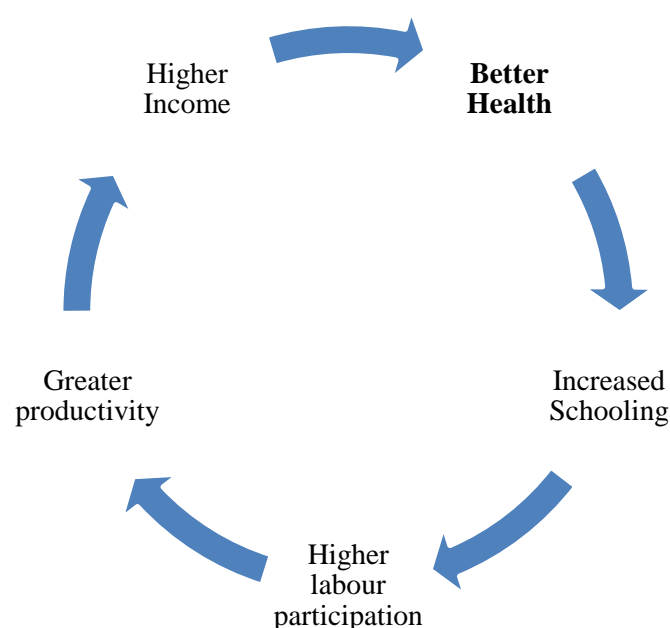


Fig 1: Investing in health care: A “virtuous spiral”

Evidence has shown that health improvements support economic development; therefore investing in health care has been a key focus of many development organisations and projects (Bloom & Canning, 2000). Good vision is a function of good health. Conversely, poor vision has been considered an indicator of vulnerability; a constraint to sustainable livelihood development and education (Ho & Schwab, 2001) and generally implicated in the health and poverty complexes which plague developing nations. Furthermore, research has shown that strong

education and health systems are vital to economic growth and prosperity, which are two factors often associated with development. This is supported by the fact that five of the eight Millennium Development Goals, as adopted by member states of the United Nations (UN) in September 2000, relate to health and education (Bloom, 2005). The Millennium Development Goals have since been replaced by the Sustainable Development Goals (January 2016), which encompass a more global agenda reflected in the 17 comprehensive sustainable development objectives, not just linked to poor countries, as was the case with the Millennium Development Goals (United Nations Development Programme, 2016).

Developing countries experience a myriad of challenges which directly impact the health and education sectors of their economies. These include limited or poorly trained human resources, a lack of infrastructure and limited funding to drive programmes (Robertson, et al., 2009). Furthermore, state budgets in developing countries are often inadequate to meet the development needs and challenges within those countries. The purpose of international 'aid' programmes is therefore to accelerate the economic development of underdeveloped countries (Rosenstein-Rodan, 1961), though some have argued whether it indeed espouses development principles (Lancaster, 2008). Whilst historically there have been differing schools of thought about development aid, including its political or moral agendas (Halloway, 1969) and its effect on growth within targeted countries (Ekanayake & Chatrna, 2010), financing of programmes by means of international aid continues to support development efforts in under-resourced countries, where research has shown that appropriate investments in health can contribute to continued reductions in morbidity

and positive economic welfare (Jameson, et al., 2006) within an enabling policy environment (Moyo, 2009).

1.2.1 Global Burden of Vision Impairment (VI) and Blindness

According to the World Health Organization (WHO), about 285 million people are vision impaired worldwide, of which 39 million are blind and 246 million have low vision (World Health Organization, 2014). Approximately 90% of these people live in low income settings. Furthermore, approximately 30% of persons with VI (80.3 million) fall into the economically productive age category of between 15 – 49 years (Figure 2).

Ages (in years)	Population (millions)	Blind (millions)	Low Vision (millions)	Visually Impaired (millions)
0-14	1,848.50	1.421	17.518	18.939
15-49	3548.2	5.784	74.463	80.248
50 and older	1,340.80	32.16	154.043	186.203
all ages	6,737.50	39.365 (0.58)	246.024 (3.65)	285.389 (4.24)

Fig 2: Global estimates of number of people visually impaired by age
(World Health Organization, 2012)

VI has substantial health and economic consequences (Fricke, 2012). Inequalities in the burden of blindness and VI exist, with global data indicating that developing

countries, particularly those in Sub-Saharan Africa, India and other Asian countries have a higher share of the burden of blindness as compared to developed market economies (Figure 3). Nearly two thirds of the global burden of blindness is in Africa, India and China (Dandona & Dandona, 2001).

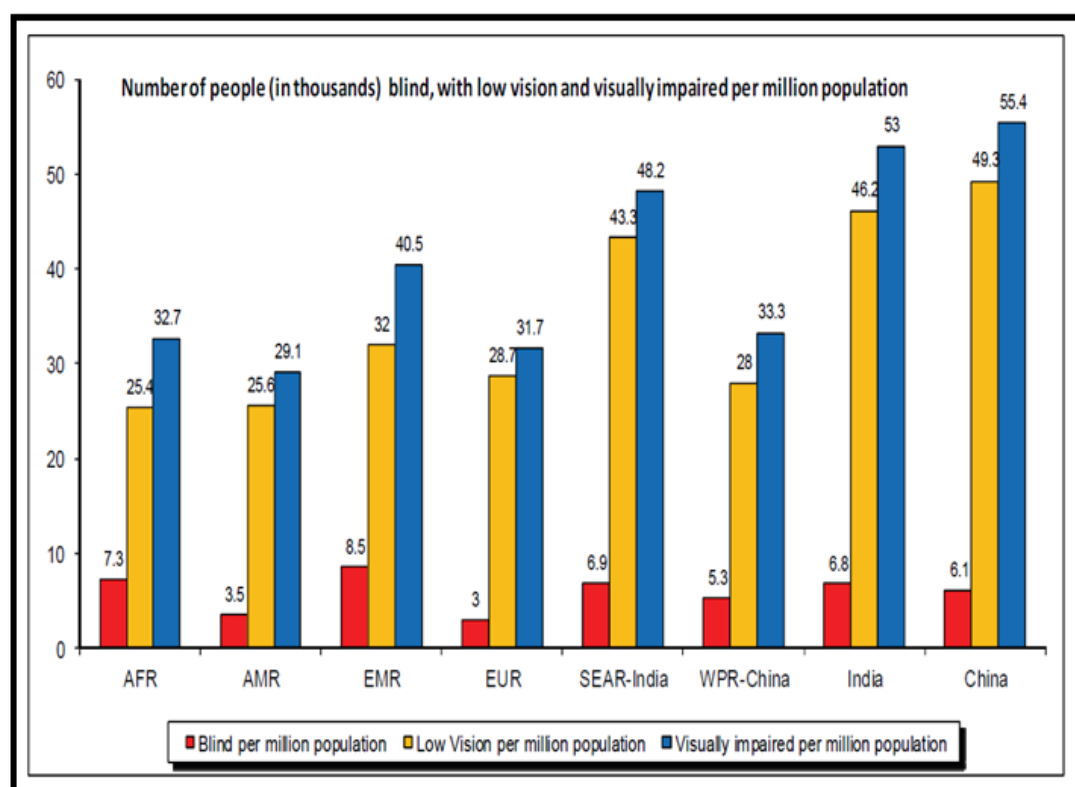


Fig. 3: Distribution of blindness and vision impairment by region (World Health Organisation, 2012)

Priority causes of vision impairment (Figure 4) include cataract, which has historically received the attention of the eye care community in poor countries; URE, trachoma, onchocerciasis and childhood blindness (Holden & Resnikoff, 2002). However, VI due to URE which is poor vision easily correctable by spectacles is the leading cause of VI globally (Figure 4).

Global causes of Visual Impairment, inclusive of blindness, as percentage

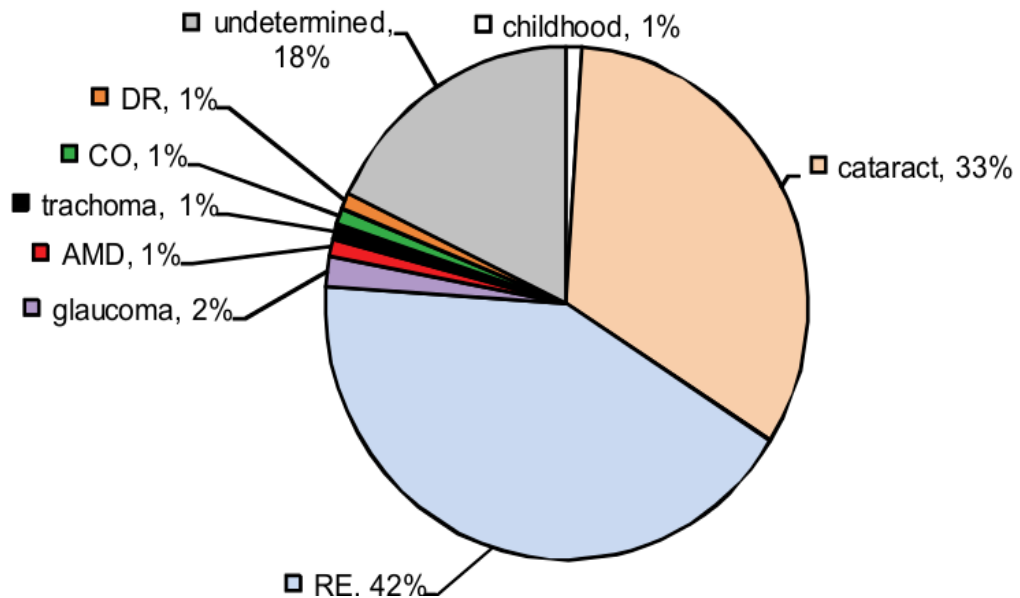


Fig. 4: Global Data on Vision Impairments (World Health Organization, 2012)

Africa is estimated to have a total population of 804.9 million people, of whom 5.8 million are blind and 20.4 million have low vision. The burden of visual impairment on the African continent is 26.2 million people (9.2%) (World Health Organization, 2012). Recent research has also shown that the number of people worldwide affected by blindness or moderate to severe vision impairment (MSVI) caused by URE increased from 6.3 million and 88 million in 1990 to 6.8 million and 101.2 million in 2010, respectively (Bourne, et al., 2013). This study confirmed an increase in absolute numbers of blind (16%) and moderate to severe vision impaired (MSVI) persons in Africa (28%) from 1990 -2010, despite a significant decrease in estimated age-standardised prevalence.

URE was second to cataract as a major cause of blindness in 2010 (Naidoo, et al., 2014). Low- to middle-income countries, however, have the compounding challenge of a scarcity of HR for refractive services, and the lack of adequately trained eye health personnel to address the refractive care needs of people, particularly those living in semi-urban or rural areas. This is considered a factor in the persistence of avoidable VI in these countries (Husainzada, 2007). Therefore, human resource development strategies to tackle VI globally could potentially reduce the overall burden of VI placed on these developing countries and their economies (International Council of Ophthalmology, 2010).

Spectacles are a primary means of correcting refractive error, yet coverage remains a challenge in Africa, as in other developing countries. Spectacle coverage, which refers to the percentage of people who require spectacle correction against those who actually have the spectacles they need to see clearly, was found to be 22.2% in Eritrea against a prevalence of URE of 6.4%. In South Africa, a country which theoretically has enough optometrists to meet the refractive care needs of its population, spectacle coverage in a presbyopic African population in the city of Durban was found to be only 4.84% against an identified prevalence of 77% for presbyopia (Naidoo, et al., 2013). Similarly in Zanzibar, spectacle coverage in the presbyopic population (over 40 years of age) was found to be 17.6% against an identified need of 89.2% for correction (Lavers, et al., 2010).

Spectacle coverage was found to be 0% in Nampula, Mozambique in a rapid assessment of refractive error, presbyopia and spectacle coverage, with 2.6% of the study population having visual impairment due to URE (Loughman, et al., 2015). Presbyopia prevalence was, however, expectedly higher at 25.8% against a

corresponding 2.2% spectacle coverage rate in this segment of the population. Spectacle coverage rates in India vary between 17.4% and 52.6%, with the highest coverage being found in urban settings (Marmamula, et al., 2013). Consequently, more than half of the people with VI due to URE in developing countries, particularly those in non-urban areas (where the majority of the population lives) (Sheingate, 2008), do not have the spectacles they require to see clearly. Since URE remains the main cause of VI worldwide (World Health Organization, 2014) and almost half of all VI is caused by URE (Fig 4), appropriate strategies are needed to address this significant public health challenge.

1.2.2 The economic cost of blindness and vision impairment

Poverty is often related to issues of malnutrition and limited access to health, water and sanitation services (Hutton, 2012); all factors contributing either directly or indirectly, to many causes of avoidable blindness. Blindness and VI therefore remain issues associated with poverty, with 90% of affected people living in developing countries where certain aspects of health care are often simply not a government funding priority (Lansingh & Eckert, 2013). Consequently, four out of five people lose their sight unnecessarily, yet 80% of blindness can be treated, cured, and/or prevented (World Health Organization, 2014).

VI has significant social and economic implications for affected individuals, families and nations. Direct costs incurred by the vision impaired person include medical care costs and loss of productivity, and indirect costs include those incurred by the family in taking care of the blind person, production losses owing to morbidity, the

intangible quality of life costs associated with the condition or premature mortality (Shamanna, et al., 1998).

Direct costs to economies include the cost of treatment, rehabilitation or other forms of social support for affected persons (Shamanna, et al., 1998). Even in developed countries, refractive care accounts for a significant portion of direct medical costs associated with adults over the age of 40 years (Rein, et al., 2006).

Vision impairment has the potential to limit an individual's capacity to obtain employment and make an economic contribution to society (Jaggernath, et al., 2014). Statistics confirm that there exists an employment gap between people with VI and people without VI of between 22.5% and 44% in developed economies such as Australia, Canada and the United Kingdom (International Council of Ophthalmology, 2010). Given the disparate health and economic profiles between developed and developing countries, and the associated increased prevalence of VI, one could infer that the employment gap between people with VI and people without VI in developing countries is, therefore, much higher.

Blindness in children has an adverse effect on growth, development as well as participation in social and economic opportunities (Gogate, et al., 2011). Those blinded during childhood or at birth therefore incur a higher economic cost to their families and society over their lifetime than those who become vision impaired later in life (Shamanna, et al., 1998). Vision deficits identified early can prevent permanent vision loss from occurring (Gogate, et al., 2011) and thereby avoid the negative socio-economic consequences associated with this.

Research into the economic cost of VI has estimated the total global cost to be \$3 trillion in 2010, projected to rise significantly in association with population growth and demographic changes (International Council of Ophthalmology, 2010). It is further estimated that the total productivity loss associated with the global burden of URE is \$202 billion (Smith, et al., 2009). For developed regions in the Americas, Europe and the Western Pacific alone where the burden of VI is significantly less than the more populous, economically challenged developing world regions, the total productivity loss associated with VI is projected to be \$176 billion by 2020 (International Council of Ophthalmology, 2010); a substantial and unnecessary cost even to developed economies. This is a social injustice, when 80% of all blindness and VI is either avoidable or treatable (World Health Organisation, 2014); yet services are not available to address this. The provision of corrective spectacles to vision impaired individuals, or early diagnosis and treatment of eye diseases for affected persons therefore has the potential to improve an individual's access to basic human rights such as education and productive employment, which ultimately results in an overall improvement in quality of life (Coleman, et al., 2006).

Addressing the problem of blindness and VI in the broader context of health service planning may therefore, potentially reduce longer-term government costs associated with the rehabilitation of blind or vision impaired persons which include vision rehabilitation, social services or local authority care (Meads & Hyde, 2003). With the greatest burden of VI being in resource-poor nations, the relationship between poverty and eye health cannot be ignored. Reducing the socio-economic burden on

individuals, countries and communities therefore becomes a developmental imperative.

The development of optometry has therefore been proposed as a solution to addressing the issues of VI and blindness (Holden & Resnikoff, 2002) with international studies suggesting that investment in eye health, and particularly programmes that address URE, provide good value for money (Thompson, et al., 2014). It stands to reason, therefore, that by sustainably addressing the structural and resource deficiencies that result in the global challenge of VI, investments in eye health could either directly or indirectly positively influence the social and economic well-being of affected communities, individuals and nations (Ho & Schwab, 2001).

1.2.3 Global action in support of eye health

VISION 2020: The Right to Sight is the global initiative for the elimination of avoidable blindness, a joint programme of the WHO and the International Agency for the Prevention of Blindness (IAPB), with an international membership of non-governmental organisations, professional associations, eye care institutions and corporations (Resnikoff, et al., 2008). Its aim is to eliminate all forms of avoidable blindness in the world by the year 2020, including URE. The launch of VISION 2020: The Right to Sight in 2000 sparked global action towards the development of eye health programmes designed to target identified priority conditions, particularly in the developing world (Resnikoff, et al., 2008). The many successes of VISION 2020 since its launch have reportedly been achieved through unique, cross-sector collaborations which enable public, private and non-profit interests to work together,

helping people to see, all over the world (International Agency for the Prevention of Blindness, n.d.). The focus on URE and human resource for development in optometry was however limited, with cataract blindness programmes still dominating the agenda.

1.2.4 Recent developments in Optometry

Optometry, as defined by the World Council of Optometry, is a healthcare profession that is autonomous, educated, and regulated. Optometrists are the primary healthcare practitioners of the eye and visual system who provide comprehensive vision care, including refraction and dispensing of spectacles and other assistive optical devices; detection, diagnosis and management of disease affecting the eye, and the rehabilitation of conditions of the visual system (World Council of Optometry 2005). Optometrists are therefore the health professionals primarily responsible for addressing the issues of URE and providing the necessary treatment to improve quality of life and independence of affected individuals (Minto 2008).

One of the goals of VISION 2020 is to make refractive services and corrective spectacles more affordable and available to the majority of affected populations through primary health care facilities (World Health Organization, 2000). However, optometry has historically not been included in the primary health care agenda or planning for health systems (Leasher & Pike, 2009), particularly in the developing world. Anecdotal evidence is that more challenging economic priorities and infective conditions such as HIV, tuberculosis and malaria affecting the developing world have overshadowed URE as a health priority. Therefore, in the resource-poor

continent of Africa, optometry as a profession has, until only recently, been either unrecognised or non-existent in many countries. Less than ten years ago, only 7 of the 53 countries in Africa offered undergraduate training in optometry (Naidoo 2007). Given this legacy, the capacity for vision care has remained vastly deficient on the African continent. More recently, however, the number of established institutions offering optometry programmes on the continent of Africa has increased to 17 (Oduntan, et al., 2014).

The realisation of the impact of URE highlighted the opportunity for optometrists to play a major role in alleviating unnecessary VI for those most in need (Holden & Resnikoff, 2002). It was proposed that the training of optometrists in developing countries would contribute to enhancing the capacity of local health systems to deliver sustainable eye care, subsequently reducing the global burden of unnecessary blindness and VI. However, establishing health care training and development programmes, particularly in Africa, is a challenging task since long term health interventions such as setting up professional training programmes are resource-intensive and typically have high start-up costs (Soderlund 1998).

Current models of optometry training in the world vary greatly from one year diploma training programmes in some parts of the world, to four years postgraduate training in places such as the United States of America, and six years undergraduate training in Nigeria and Ghana. The challenges of duration for professional training, which on average takes four years, as well as huge financial cost to set up optometry training programmes, are further strained by the need to produce graduates capable of meeting the challenges of primary eye care within deficient health systems, where

speciality care is an even scarcer resource (Du Toit, et al., 2013). Despite these, the establishment of optometry training programmes in Africa has grown, and is expected to have a significant impact on addressing the shortage of resources by establishing optometrists as part of a comprehensive eye health team (Minto, 2008).

1.2.5 Profile on Lusophone Africa

Portuguese-speaking Africa, otherwise known as the Lusophone region of Africa, is spread across eastern, southern and western geographical regions of Africa (Figure 5).



Fig. 5: Map of Lusophone Africa (ref:

<http://intlwgrrls.blogspot.com/2009/04/on-april-18.html>)

Population estimates across the region vary greatly. Mozambique has the largest population in the region, estimated at around 27 million people (World Bank, 2014). In order of decreasing population sizes, the countries following after Mozambique

are Angola (24 million), Guinea Bissau (1.8 million), Cape Verde (514 000) and Sao Tome e Principe (186 000), with a total regional population of approximately 55 million (World Bank, 2014). This linguistic region has, until recently, been made up of five countries. More recently, Equatorial Guinea has also been included as part of the Lusophone region (Vieira, 2013).

These countries were colonised by Portugal around the 15th century and have, even after liberation in the early 1970s, been somewhat linguistically isolated from development in the rest of the continent (Akinwale, 2011). The continued use of Portuguese as an official language in these countries, even after independence, meant that they would remain isolated from the English speaking world for as long as Portuguese was a dominant language (Munyaradzi & Rambe, 2013).

Mozambique is situated on the eastern coastline of Southern Africa (Fig 5) and consists of ten provinces, with the capital city of Maputo located at the southern tip of the country. Nampula province is the third largest city in Mozambique situated in the north of the country, with Nampula city as its provincial capital (Figure 6). It is, like most other provinces in Mozambique, largely rural with high levels of unemployment. Portuguese is widely spoken as the official language, along with other local dialects. The country received its independence in 1975, yet still suffers significant developmental challenges. Two thirds of Mozambique's population lives in rural areas, with the largest segment of the population being children under the age of 14 years. About 5% of the country's population is located in the capital city of Maputo (Index Mundi, 2016).



Fig. 6: Map of Mozambique showing Nampula in the north (ref: <http://wwwnc.cdc.gov/travel/destinations/traveler/none/mozambique>)

Since 1990, the Human Development Index published by the United Nations Development Programme has ranked countries based on national development, taking into account three basic dimensions of human development namely health, education and income. Mozambique has consistently ranked as one of the lowest countries on the United Nation's Human Development Index, ranking 180 out of 188 countries in 2014 with the worst performing sector being education (United Nations Development Programme, 2014). Similarly, the other Portuguese-speaking African countries rank in the bottom 25% of countries rated in the index in terms of overall development.

In Lusophone Africa, optometry as a profession has largely been absent from mainstream health services. Its reach has therefore been severely limited with only a

very small percentage of the population being able to access vision-related care through health centres in the main cities (Ministry of Health Mozambique, 2012). Linguistic barriers have also resulted in Portuguese-speaking Africa being somewhat isolated in comparison to developments in eye health services across the rest of the continent, with regional training programmes in English being of limited benefit.

1.2.6 Rationale for the Mozambique Eyecare Project (MEP)

Following decades of civil war, more than 60% of Mozambique's population are still reportedly living in severe poverty (United Nations Development Programme, 2014). The infrastructure capacity of the health system to deliver eye health services remain vastly inadequate, with only 1 tertiary hospital in the country situated in the capital city Maputo, 7 secondary level centres providing eye care services and 16 primary level centres providing eye health services at the time of implementation of the MEP, with only 1 ophthalmologist in Nampula province and the majority concentrated around the capital city Maputo (Ministry of Health Mozambique, 2012). Furthermore, in terms of HR, recent data indicates that in 2014, there were still just 25 ophthalmologists in Mozambique (8 Mozambican and 17 expatriate), 134 ophthalmic technicians and 12 opticians (Mozambique Eye Health Advocacy Group, 2014). The historical underdevelopment of, and under-investment in eye health services on the African continent, reflects in the table below, demonstrating the considerable gap between Lusophone African and other regions in Africa (Table 1) (International Agency for the Prevention of Blindness, 2014).

Table 1: Eye health personnel across various African regions

Linguistic Groups	Population (million)	Number of Ophthalmologists	Ratio of Ophthalmologists to population	Number of Allied Eye Health Professionals	Ratio of Allied Eye Health Professionals to population
Anglophone	433	1,158	1/373,000	3,322	1/130,000
Francophone	263	499	1/527,000	1,784	1/147,000
Horn of Africa	101	123	1/821,000	210	1/481,000
Lusophone	46	37	1/1,124,00	88	1/522,000
Total	843 million	1,817	1/463,000	5,404	1/1556,000

Specific challenges in relation to HR for health in Mozambique, as in other developing countries, include staff shortages, inequitable distribution of health staff and high staff turnover, which results in low coverage of eye health services. Furthermore, there is no cadre dealing exclusively with eye health at community level, and existing strategies such as longstanding NGO-driven programmes are not sustainable (Mozambique Eye Health Advocacy Group, 2014). Developing and implementing national policies and plans for the prevention of avoidable VI have therefore been identified as the cornerstone of strategic action toward the elimination of avoidable blindness; particularly in relation to human resource development as a function of the health system (World Health Assembly, 2013).

As part of its overall health system planning and development, the Ministry of Health in Mozambique, guided by its national plan for eye health service development in 2007, identified the need for quality eye care services accessible to all Mozambicans. Around the same time a new university, Universidade Lúrio, opened in Nampula province in the north of the country, expressing interest in training optometry

professionals in support of the country's overall health and eye care development initiative.

The national eye care plan for Mozambique espoused the following objectives (Ministério Da Saúde (MISAU), 2007):

- To develop inside of the national health system a quality eye health service accessible to the whole people;
- To integrate eye care into primary health care;
- The training of human resources capable of fulfilling the needs at different levels of health service provision;
- Improving the ophthalmology infrastructure within health facilities;
- Increasing the number of health facilities with capacity for eye health service provision;
- To guarantee an adequate supply of ophthalmology equipment and consumables within health facilities; and
- To promote community participation in the development of eye health care services.

While there was a strong focus on ophthalmology, this represented a general acknowledgment of the need for sustainable, comprehensive structures to be developed which would address the country's eye health needs.

Following consultation and discussions with the Brien Holden Vision Institute (BHVI), formerly known as the International Centre for Eyecare Education (ICEE) and the Dublin Institute of Technology (DIT) in Ireland, a funding opportunity was

identified for a development partnership, for the purpose of establishing optometry training in Mozambique. The proposal for what became known as the MEP was successful in its bid to secure funding, with the undergraduate optometry programme being officially launched in Nampula, Mozambique in February 2009.

At the time of commencement of the project, Universidade Lúrio was a recently established public university positioned to serve the northern provinces of Mozambique as a new higher education hub for health sciences. Human resource capacity for eye health, as identified by the Ministry of Health, was only 15 ophthalmologists (8 local with 2/3rds in Maputo) and 7 expatriates spread across the country, with 5 ophthalmologists in training. Other eye care professionals included 1 optometrist, 23 (Cuban-trained) refractionists, 17 ophthalmic technicians and 2 orthoptists (Ministry of Health Mozambique, 2012). There was only 1 ophthalmologist in Nampula Central Hospital, with no optometrists in a city and province of almost 480 000 and 4 million people respectively (Wikipedia, 2016).

Available data on eye health workers for the broader Lusophone region also depicts an alarming deficit in terms of practitioner- patient ratios, with the number of ophthalmologists cited at 83 and the number of allied eye health professionals for the region at 88 (International Agency for the Prevention of Blindness, 2014). This data further highlights the need to improve in-country capacity in the region through the training of eye health personnel.

The MEP presented a collaborative solution for the development, implementation and evaluation of a regional model of professional optometry training for Lusophone

Africa which resulted in a North-South, South-South partnership with partners based in Ireland, South Africa and Mozambique. It received its core funding through Irish Aid's 'Programme of Strategic Cooperation between Irish Aid and Higher Education and Research Institutes (2007-2011)'.

The MEP brought the first Portuguese-language optometry programme to the African continent, proposing a regional model of training, to be based in Mozambique, which would serve the training needs of this previously unserved region. Universidade Lúrio therefore became the first institution in Lusophone Africa to begin training professional optometrists. The project had a strong development focus aligned with the overall aim of the Irish Aid development funding, in support of their mission to reduce poverty by contributing to the achievement of the Millennium Development Goals. It was envisaged that this training programme would have a significant impact in addressing the shortage of human resources for eye health in Mozambique in the immediate term, extending to other Portuguese speaking countries on the continent in the long term, establishing the optometry profession as part of a comprehensive eye health team within this region (Minto 2008).

Overall, the MEP broadly sought to align its activities with Irish Aid objectives of:

- Strengthening institutional capacity for development research and teaching in Mozambique as a southern Higher Education Institute through sustained and flexible collaborative partnerships in optometry education, training and research;
- Increase specialist knowledge in the field of optometry;

- Drive quality research expertise and knowledge in eye health, enhanced by improved higher education capacity towards solving Mozambique and Portuguese-speaking Africa's development challenges; and
- Develop policies and programmes in the south and north, with a strong poverty focus informed by evidence generated through this project.

The MEP's priority was to establish a long term, sustainable and responsive eye health service for the population in Lusophone Africa. The project sought to facilitate greater access to training in eye health professions, notably optometry, towards providing affordable and accessible eye care within the health system in targeted countries. Since optometry was not a recognised profession in Mozambique, and with no local training opportunities, the need for such an initiative was evident. Global advocacy efforts have also highlighted the benefit of optometry in addressing these challenges (Holden & Resnikoff, 2002).

The primary intervention for the MEP was the development of the undergraduate optometry training programme at UL. This was supported by other aspects including infrastructure planning, provision and service development, as well as research and capacity building, aimed at ensuring long term sustainability and growth of the profession of optometry within targeted countries (Loughman, 2008).

Specifically, the objectives of the MEP were to:

- Address the human resources training needs for eye health in the Lusophone Africa region by establishing an integrated programme of

education through a regional, multiple entry and exit model (MEEM) of optometric training and vision care delivery;

- Institute a research infrastructure that supported national development policies; and
- Establish a mutual learning network equipped with specialist knowledge to provide solutions to eye health challenges facing the developing world.

By training professional optometrists from across the region, it was envisaged that the capacity to deliver sustainable optometric care within the local health systems would be improved, and that the burden of unnecessary blindness and VI in these countries would be reduced. University records at Universidade Lúrio have confirmed that 40 optometrists have passed through the programme as at the end of 2015.

Advocacy efforts have since seen optometry included in the new, still-to-be implemented, National Eyecare Plan for Mozambique (2015-2019) which is expected to be the most progressive national plan ever adopted in Mozambique (IAPB, 2013). However, meeting the eye care needs of such a large, mostly unserved region presented a challenge for the MEP, mainly due to the poorly developed health systems and infrastructure resources of its beneficiary countries (Global Health Workforce Alliance, 2013).

While not the first optometry programme in Africa as part of the VISION 2020 agenda (Minto, 2008), the MEP presented a unique, previously untested, regional adapted model of training in optometry. It is for this reason that this research was undertaken; to understand and document the factors and strategies required for

successful design and implementation of projects of this scale and nature. Through this research, it was hoped to understand how to approach and structure the establishment of an optometry training programme in particular, as well as other undergraduate programmes, aimed at meeting health care service delivery needs in far-reaching, un-served regions which may be linguistically isolated from developments in the English-speaking world.

1.3 Problem statement and motivation for the research

There is a severe shortage of trained HR to provide refractive services in LA. Given this limitation, the MEP offered a solution for long term human resource development and eye health service provision in this region. The proposed model was untested, with little by way of benchmarking for multi-partner projects of this nature in optometric development. The research therefore sought to evaluate the MEP from its conceptual stages, through its implementation, in order to establish a framework for similar development initiatives in the future.

Evaluation of the MEP provided the opportunity to:

- Examine the feasibility of a regional, adapted model of training in optometry;
- Explore the dynamics within a multi-country, linguistically diverse partnership and its impact on project implementation;
- Evaluate the extent to which language differences affect partner relations and academic programme implementation;
- Understand the nature of broader project implementation challenges and the development of the academic programme;

- Document approaches to programme development in a complex, underdeveloped system; and
- Develop a framework to inform the undertaking of similar development projects in optometry.

The intention of the research was to gain an understanding of the factors which support or hinder successful development project outcomes in the field of optometry, and to present an evidence-based approach for use in future initiatives which could guide potential partners, funders or project implementers in project planning and roll out.

1.4 Aim and Objectives

The aim of study was to evaluate the MEP in order to develop a framework for development-led training projects in optometry.

Specific objectives were to:

1. Explore the rationale for the MEP;
2. Review factors informing the project's model;
3. Investigate factors influencing the application of the model;
4. Identify challenges and barriers to the implementation process;
5. Review the rationale and feasibility for the partnership approach;
6. Evaluate operational aspects relating to the partnership; and
7. Develop a framework for externally funded partnerships in optometry.

These objectives are outlined in Table 2.

Table 2: Research Objectives and proposed outcomes

Objectives		Method	Phase	Outcome
1	To explore the rationale for the Mozambique Eyecare Project	Interviews and Document review	1	Description Ch 5
2	To review factors informing the project model	Interviews and Document review	Review	Description Ch 5
3	To investigate factors influencing the application of the model	Interviews and Document review		Discussion Ch 5
4	To identify challenges and barriers to the implementation process	Interviews and Document Review	Evaluate <i>Link to theory</i>	Discussion Ch 6
5	To investigate the rationale and feasibility for the partnership approach	Interviews and Document review		Discussion Ch 7
6	To evaluate operational aspects relating to the partnership	Interviews and Document Review		Discussion Ch 7
7	To develop a framework for multi-partner development-funded partnerships in optometry	Systems Theory	3 Design	Framework Theory Ch 8

1.5 Type of Study and Methods

This study employed a qualitative research design. Qualitative research can help us to interpret and better understand the complex reality of a given situation (Mack, et al., 2005). The strength of qualitative research is its ability to provide complex textual descriptions of how people experience a given research issue. The study therefore elicited the views, perceptions and experiences of key informants (KI) related to the project, specifically during its conceptual and implementation phases circa 2008 – 2012.

The results of qualitative research studies report actual statements from people, which in this study was valuable where sampling was purposive and the sample size was small. Qualitative research also strives to understand patterns, similarities and differences in the representation of participant's perspectives as conveyed through media such as interviews and observations (Erlingsson & Brysiewicz, 2013). This methodology was chosen since qualitative research explores reality as constructed by individuals (Erlingsson & Brysiewicz, 2013) and highlights local perspectives in rich detail.

Data was collected via Key Informant Interviews (KIIs) and validated using document analysis. KIIs are loosely structured in-depth interviews with a select (non-random) group of persons who have specialised knowledge about a topic or issue being researched (Mack, et al., 2005). A KI, in the context of research, refers to the person with whom an interview is conducted.

Document review is a way of collecting data by reviewing existing documents, which may be internal or external to a programme or organisation. Documents may

be hard copy or electronic and may include reports, funding proposals, meeting minutes, etc. (Center for Disease Control and Prevention, 2009).

1.6 Study Outcomes

The study results have been used to design a framework for the establishment of development projects, particularly those related to education and human resource development projects in the field of optometry, encompassing the design, planning and implementation phases.

1.7 Outline of the Thesis structure

The study is presented in the following nine chapters.

Chapter 1:

Introduction

Chapter 1 presents an introduction to the research, the background to the research problem, the type of study as well as the study aims and objectives. It also presents an outline of the chapters to follow.

Chapter 2:

Eye health and Development

This chapter gives a detailed review of literature on the area of study. This includes a background to eye care in Portuguese-speaking Africa more generally and in Mozambique specifically, against the backdrop of the burden of VI and economic poverty in these countries. It will further look at optometry training globally, emerging initiatives for the development of new undergraduate optometry training programmes in developing countries, as well as the successes and challenges of partnership approaches in development work.

Chapter 3:

A Systems Framework

This chapter will present the theoretical framework used in this research and describe systems theory as a tool for designing development projects.

Chapter 4:

Research Methods

This chapter outlines the research methods used in the study and describes the theory supporting these.

Chapter 5:

Planning for development projects in eye health: Implementation lessons from the MEP

This chapter will present challenges experienced in the design and implementation of development-linked optometry training models, addressing Objectives 1- 4.

Chapter 6:

Development of new programmes: professional identity and local integration

This chapter will present findings on challenges experienced developing the new profession of optometry as part of the MEP, partially addressing Objective 4.

Chapter 7:

Partnership in eye health development projects: Factors for consideration

This chapter will present the results of the partnership experience and will outline key principles for successful partnerships in development projects, addressing Objectives 5 and 6.

Chapter 8:

A systems framework for development projects and partnerships in eye health

This chapter consists of a summary of the main findings of the research and as well as suggestions and recommendations for best practice, *inter alia*, factors for informing strategies around development project models in optometry; principles around the establishment, structure and management of partnerships; as well as presenting a framework for use in the design, planning and implementation of optometry development projects, addressing Objective 7.

Chapter 9:

Conclusion

This chapter will present the conclusion of the study from the research findings.

1.8 Conclusion

VI from URE is a significant public health challenge. The profession of optometry has a role to play in reducing the burden of VI from avoidable causes. Global advocacy efforts and action around developing solutions to the global eye health crisis have in recent years, included optometry development as a solution to addressing the burden of avoidable blindness in the world.

Understanding the challenges and complexities experienced in setting up projects such as the MEP can provide a framework for future development projects in this field, maximising the return on investment for donors and potentially enhancing the sustainability of these projects. With less than five years to VISION 2020's objective of eliminating all causes of avoidable blindness in the world by 2020, many more projects of this nature will continue to be established. The results of the study can therefore be used to inform the planning and implementation of these development initiatives.

CHAPTER 2:

EYE HEALTH AND DEVELOPMENT

2.1 Introduction

This chapter will review literature relevant to the topic of research interest. It presents a background to development work in general, and discusses development approaches in the field of eye health. Specifically, it presents a global perspective on optometry as a profession positioned to impact the burden of VI in countries of need. The chapter will also present the research context in relation to the MEP, and partnership as a means to addressing development needs.

2.2 From Aid to Development

The concept of development emerged around the middle of the twentieth century following the Second World War, and has historically been associated with decolonisation and poverty-related issues mainly in the South (Rist, 1999). The overarching principle in development work is one of reducing the inequalities between nations, and meeting the basic needs of those living in resource-poor countries. The United Nations was formed in October 1945 as an intergovernmental organisation founded to promote international co-operation after World War II (U.S. Department of State: Office of the Historian, n.d.). It began its development work under the United Nations Relief and Rehabilitation Agency. Together with the

World Bank, it engaged in post-war reconstruction (Ehrenfeld, 2004). These bodies later evolved into regional structures in the late 1950s, followed by the emergence of bilateral programmes in the 1960s.

Foreign aid or Official Development Assistance is a transfer of resources to developing countries on concessional terms, with the promotion of economic growth and welfare as its main objectives (Ehrenfeld, 2004). A question which has often arisen in development work regards the difference between ‘aid’ and ‘development’. This is summed up in an interview with a former WHO consultant for Africa programmes in blindness prevention:

“A lot what we see in Africa has been given the name ‘Aid’; but I am not sure whether it is really the way to help us. A lot of it is done out of a good heart. People see the need, some of it very urgent, and they respond by trying to help. And in helping, they bring ready-made solutions, some half-cooked, some that may be good for (developed nations), but that are not necessarily appropriate for the continent. But because those are brought with resources, those who receive that aid may not even have had time to contribute to it. So as a result, over the years, people find themselves in a situation of total dependence on whatever is brought at a time which is not of their choosing” (Etay'ale, 2011).

Etay'ale (2011) further compared these two concepts to the adage, ‘Give a man a fish and he will eat for a day. Teach a man to fish and you will feed him for a

lifetime [at a time of his choosing]'. He describes this as the fundamental difference between aid and development.

Aid is now generally understood as any activity meeting an immediate need for a small group of affected people, which brings immediate results with no long term benefit or transfer of skills; whereas development implies efforts towards planning for local capacity development so that all citizens can have equal long term benefit from the investment. However, these two terms are often used interchangeably. True 'development', however, requires investment into systems; building infrastructure and ensuring that key people or organisations are empowered to take care of their own problems (Lusthaus, et al., 1999, Etay'ale, 2011).

2.3 The Development Imperative

The concept of development is a complex one, with many descriptive definitions available. Included amongst these is that 'development is a process which enables human beings to realise their potential, build self-confidence and lead lives of dignity and fulfilment'; and 'expanding the range of individual choice' (Rist, 1999). However, development goes beyond the individual, with development activities primarily aimed at broader economic growth and poverty alleviation (Oyeshola, 2007). The World Bank's Comprehensive Development Framework puts health and education at the centre of poverty reduction strategies, advocating for holistic, long term solutions, with the country as the lead directing the development agenda (World Bank, 2013).

Despite historical criticism over the lack of success in many development initiatives, the practice continues to be justified (Rist, 1999) since developing countries typically lack the resources to deliver on all their citizens' needs which may be human, financial, intellectual or physical resources. Governments in the developed world and other well-resourced aid agencies have therefore continued to commit financial support to address social and economic challenges impeding the development of poorer countries. Many times, however, development initiatives concentrate on the 'tip of the iceberg' and never really look at the structural issues (Etay'ale, 2011). Helping from a developmental perspective requires that one must take the time to understand what the underlying difficulties are. Central to this approach, is local participation in decision-making; where if neglected, political or self-directed motives in development work may sometimes be questioned (Ehrenfeld, 2004).

2.4 Solutions for developing countries: Who is the Innovator?

Development efforts have often been criticised for being top-down or prescriptive in nature, with minimal input from beneficiaries, if any. These criticisms led to a move towards more participatory approaches, where the beneficiaries or community defines the solution, rather than solutions being designed based on 'the outsider perspective' (Thomas, 2013).

2.4.1 Community Engagement

Participatory development as a concept and practice was inspired by the work of Robert Chambers. He saw it as a way of overcoming the shortcomings of top down development and the limitations of ‘expert’ research and planning, with a belief that ‘local people know best’. However, while the principles behind participatory development practices are noble, it has sometimes been criticised for being tokenistic; and in many cases does not adequately address the issues of top-down development and results-based planning or inclusion using local skills and knowledge (Thomas, 2013). Adequate consultation with relevant stakeholders is however critical to the success and sustainability of development initiatives, with results showing that improved engagement leads to improved results (Verdant Consulting, 2010). Particularly with the establishment of training programmes, comprehensiveness of arrangements and consultation at political, professional and educational levels must be had (Worley & Nichols, 2001).

Research has also shown that while more donors have embraced participatory development approaches, the administrative structures and staff skills of both donor and recipient organisations remain appropriate to top-down, linear processes that are seldom conducive to participatory development (Thomas, 2013). Therefore, development efforts have sometimes been accused of maintaining and reinforcing exclusion, while claiming to eliminate it (Rist, 1999). This may be further evidenced by the fact that historically, many development organisations (typically from the North) assign senior expatriate project staff to field offices or projects (typically in the South). This means that much of the power and decision-making

still lies with external agencies, with little by way of transfer of this power or capacity to locals (Mukasa, 1999). These structural shortcomings have resulted in the effectiveness of many aid efforts being called into question.

Development work is fundamentally about relationships (Machado, 2014). Projects depend upon relationships to be successful. This includes relationships among and between community leaders and members, government decision makers and development organisations. At the beginning of a development project, very little tangible development work can be accomplished as much time is spent meeting people and building relationships; gaining trust, overcoming language barriers and orienting oneself in a new socio-economic context. This is considered a critical phase in the development project (Machado, 2014).

2.4.2 Development partnerships in education

Education has been recognised as an accelerator of social and economic development (Efenkwe, 2013). Many education development projects are facilitated through partnerships. However, educational partnerships face specific challenges. Partnerships which are poorly conceptualised and badly managed promote dependency, ultimately doing more harm than good (Bailey & Dolan, 2011). In historic North-South education development partnerships, the challenges facing Southern institutions have been noted as, inter alia, insufficient funding for research, poor information and communication technologies, physical infrastructure and administrative support. In addition, heavy teaching workloads, recruitment and retention of staff, poor wages, poor leadership and reliance on external funding are

some of the operational challenges facing development projects in higher education (Bailey & Dolan, 2011). Other challenges in development work have included lack of coordination of activities; with such weaknesses cited as leading to the systematically lower rates of return on development investments (Adelman & Morris, 1997).

2.4.3 Aid Effectiveness

There are notable recipient gains from donor funding; with the inflow of finances having successfully addressed critical shortages in capital and low skills levels in several countries (Ehrenfeld, 2004). However, bilateral development aid may sometimes be oriented toward the donor's economic and strategic interests. Therefore, strategic motives may sometimes be behind certain aid allocations which may be in line with relevant national interest, and not merely altruistic in nature. In this light, the effectiveness of aid has sometimes been questioned; with mixed results on the economic growth benefit (Ehrenfeld, 2004).

Africa has historically been the world's most aided region, yet economic growth has generally been low in proportion to the amount of aid received. Dependency and a lack of local ownership have been among the challenges experienced (Lancaster, 1999). Previous development experiences have also shown that an overabundance of uncoordinated donors can crush local ownership and increase transaction costs (Brautigam and Knack 2004).

In Mozambique, the deluge of health sector NGOs in the 1990s was criticised for fragmenting the local health system and undermining local control of health programmes (Pfeiffer, 2003). However, NGOs with active eye care programmes in the country came together under the banner of the Mozambique Eye Care Coalition, whose role was to coordinate eye health programmes in Mozambique and lobby the Ministry of Health for new initiatives or changes in policy. This body, which was coordinated by major NGO representatives, met several times a year and actively engaged the Ministry of Health in Mozambique through the National Eye Care Coordinator who was represented on the Coalition. The MECC supported the endeavours of the MEP and facilitated local buy-in and support where required.

The challenges relating to donor aid saw the development of the Paris Declaration on Aid Effectiveness (2005), in order to improve the quality of aid and its impact on development. It outlined five fundamental principles for making aid more effective. These are (OECD, 2015):

- **Ownership:** Developing countries must set their own strategies for poverty reduction, improving their institutions and tackling corruption;
- **Alignment:** Donor countries must align initiatives with local objectives and use local systems;
- **Harmonisation:** Donor countries should coordinate and simplify procedures, and share information to avoid duplication;
- **Results:** Developing countries and donors must shift focus to measurable development results; and
- **Mutual accountability:** Donors and partners should be equally accountable for development results.

This was later supported by the Accra Agenda for Action (2008) which further emphasised inclusive partnerships in capacity development (OECD, 2015).

2.5 Eye Health Development: A historical snapshot

Ideas around what constitutes development in eye health have changed over the years.

“There are two ways that you can help address some of the urgent needs in blindness prevention. The first one is to fly people in, line people up and do as many operations as you can. But then what is left behind? That way [we have been saying for many years] helps only a few, and leaves many more for dead” (Etay'ale, 2011).

Eye health development initiatives have therefore evolved from a historical ‘missions’ approach aimed at meeting immediate needs for a small minority, to more recent interim or ‘stop-gap’ measures aimed at servicing a larger proportion of the population through medium term strategies using available resources; and now to more sustainable ‘development’ approaches that address structural challenges within health systems, ensuring equal access to all citizens in the long term.

Given the limitations of earlier strategies, development initiatives have shifted towards a systems development approach which focusses on building infrastructure and ensuring that locals are trained; and that for every person trained, the necessary tools and equipment are available for them to conduct their work. Though results

may not immediately be realised using this approach, over time it ensures that any investment brought into a country has lasting impact (Etay'ale, 2011).

2.5.1 Investing in Human Resources for Health

Health and development are inextricably linked (Phipps, 2003). Therefore, health care projects have been the centre of many development and poverty alleviation initiatives globally.

Notable research has argued that investing in human resources for health should be a central part of any strategy to achieve true development outcomes (Anand & Barnighausen, 2004). The global acknowledgement of the need to address challenges facing human resources for health has resulted in increasing investment in programmes or activities towards the same. The 10-year action plan on human resources for health proposed in *The World Health Report 2006* (World Health Organization, 2006) and the establishment of the Global Health Workforce Alliance (GHWA) drew global attention to issues of human resources for health. Development partner strategies and support in the area of human resources for health therefore gained momentum over the last decade, often involving multiple role-players.

In the developing world, health workers are a critical component of health system strengthening and disease control programmes (Zhao, et al., 2013). However, despite global investment in human resources for health, certain challenges have emerged which have undermined the effectiveness and impact of these investments. These include (Zhao, et al., 2013):

- uncoordinated and fragmented investment;
- competition for the few existing human resources for health which exacerbates the human resources for health crisis; and
- investments being largely focused more on short-term solutions rather than on building sustainable human resources for health systems.

The global disparity and inequity in the availability of eye health care services fails to prevent and control an overwhelmingly increasing magnitude of avoidable blindness, particularly in the highly populated poorest parts of the world (World Health Organization, 2015). Therefore, stakeholders in eye health and development have moved towards addressing the shortage of trained personnel in the field of eye health, with focus primarily on preventable causes of avoidable blindness such as URE in these resource-poor regions (Naidoo & Jaggernath, 2012).

2.5.2 Advocacy Frameworks

Developing nations have historically carried a disproportionate burden of blindness and VI, with Sub-Saharan Africa significantly affected by health inequalities which have resulted in this imbalance (Dandona & Dandona, 2001). Much of this burden is directly attributable to a lack of resources (physical, human, intellectual and financial), as well as the overall state of underdevelopment of affected nations (Ho & Schwab, 2001).

URE can cause needless VI and even blindness (Ntim-Amponsah, 2007), hindering education, personality development and career opportunities. In addition, it imposes an economic burden on society (Dandona & Dandona, 2001). Socio-economic variables such as ethnicity, income and education have also been linked to the prevalence and causes of blindness and VI. These realisations formed the backdrop against which the WHO and IAPB, launched VISION 2020: The Right to Sight in early 2000.

URE did not receive much attention prior to the year 2000. However, several WHO resolutions, including the more recent WHA Resolution 66.4, urged member states to strengthen national efforts to prevent avoidable VI such as URE through, inter alia, multi-sectoral engagements and partnerships for eye health (World Health Assembly, 2013).

It is estimated that the total productivity loss associated with the global burden of VI as a result of URE is US\$ 202 million (Smith, Frick et al. 2009). Blindness and VI therefore remain key barriers to development and continuing to eliminate avoidable blindness among the poorest of the poor is a moral imperative.

VISION 2020: The Right to Sight encourages unique, cross-sector collaborations which enable public, private and non-profit interests to work together (United Nations Development Programme 2010). This global initiative for eye health specifically advocates for prevention of blindness activities through its international membership of NGOs, professional associations, eye care institutions and corporations. At a national level, partnerships between the Ministry of Health , national and international NGOs, professional organisations or civil society groups facilitate the development and implementation of sustainable and effective national

eye care programmes and plans, as in the case of Mozambique; where NGOs under the banner of the Mozambique Eye Care Coalition worked with the Ministry of Health to develop what is expected to be the most progressive national plan (2015-2019) yet (IAPB, 2013). The WHO has, through agencies working within countries, supported the development of national VISION 2020 plans in several African countries (Foster, 2004).

Noting that the provision of corrective spectacles to vision impaired individuals, or early diagnosis and treatment of eye diseases has the potential to improve an individual's access to basic human rights such as education, productive employment and subsequent quality of life (Coleman, Yu et al. 2006), global advocacy efforts and action towards the development of optometrists as a solution to addressing the URE burden led to the emergence of new training programmes, notably in Africa and Asia (Minto, 2008). The development of optometry therefore gained momentum following key policy positions by the WHO as adopted by the WHA.

2.5.3 Models of Training

Regional training centres represent a model of training catering to the common needs of a region, rather than individual countries. They are usually developmental in nature, in an effort to minimise the cost of individual in-country set ups, where these may not be justified based on population sizes or related demand. Tiered training is a model of training where various levels of graduates can be produced within a single programme.

In a regional model of vocational training in Australia, the following were considered determinants of success in such initiatives (Worley & Nichols, 2001):

- an appropriate choice of partners;
- high-quality training;
- flexibility in the design of the regional model;
- fair and transparent means of administration;
- an assurance that models are based on adequate local resources and sound costing;
- strong evidence of capacity to deliver and potential for sustainability; and
- a well-constructed evaluation model with clear roles set at each level.

Linguistic barriers present a sociocultural constraint that contributes to inadequate pursuit of specific development goals. Language has therefore been cited as a significant factor in the realisation of expected goals within development projects (Bamgose, 2014). It is also a key factor in inclusivity, and cannot be overlooked as a possible limitation to the full attainment of development objectives.

English has, however, been positioned as the language for international communication, with the global demand for English continuing to grow (Coleman, 2011). Academic debates have taken place regarding growth in the use of English as a developmental tool, and its contribution to economic and social development especially in countries with fragile political pasts. This is, however, a complex issue; since language is also viewed as part of culture. Therefore, some see the promotion of the use in English as linguistic imperialism (Phillipson, 1992).

In post-colonial settings, functional arguments in favour of English language usage promote the use of English as a gateway to the world. The benefits are seen as the English language usage having economic utility such as enabling people to operate technology; or as having an ideological function such as representing modernity and being a status symbol for material advancement and efficiency (Phillipson, 1992). However, the purpose of development work is to empower countries to develop themselves according to their own standards (Machado, 2014) and not to hinder them by imposing Eurocentric developed world models that maybe out-of-context. Therefore, a Portuguese language optometry programme, in line with the official national language of all countries in the targeted region was proposed and implemented in the MEP.

2.6 Partnerships in Eye Health Development

Partnership as a development concept is not new. It refers to separate, individual organisations entering into a collaborative relationship for purposes of delivering on a specific mandate or project outcome (Bailey & Dolan, 2011). The experience of development partnerships with the private sector in Colombia showed that partnerships usually represent innovative solutions for challenges that impede development (Pfisterer, 2013). However, experience has also shown that the principles which underlie a partnership must be clear, with the choice of partners critical to the success of consortia initiatives (Worley & Nichols, 2001). Authentic partnerships are considered to be long term, having shared responsibility, reciprocal obligation and balance of power. Furthermore, the core principles of accountability,

joint decision making and transparency, as well as mutual interest have been highlighted as essential components for success in development partnerships (Bailey & Dolan, 2011).

Project management mechanisms in the Mozambican health scene have demonstrated that development progress requires intense and sustained work, and also noted that critical factors contributing to a successful partnerships are frankness, risk-taking and having a long-term perspective (Pavignani and Durao 1999). For long term sustainable development, local capacity must be strengthened, together with educational opportunities; infrastructure and an inclusive ‘globalisation’ approach (Clifford & Zaman, 2016).

2.6.1 The Development of Schools of Optometry

Globally, refractive services are provided by various categories of eye health workers including optometrists, ophthalmic technicians, opticians and ophthalmologists. This is dictated primarily by their availability in different parts of the world. Adequate numbers of trained personnel for carrying out refractive services in many developing countries has, however, been deficient; with an acknowledgment in the early 2000s that many more personnel need to be trained for this purpose (Dandona & Dandona, 2001). More specifically, Holden and Resnikoff (2002) identified that optometrists are well positioned to not only address the URE burden, but other areas of intervention for eye health such as detection and management of potentially blinding conditions including cataract and glaucoma, also priorities under VISION 2020.

Since the release of VISION 2020: The Right to Sight's priority list for global action against VI, there have been numerous interventions toward human resource development for refractive error service provision, including the upskilling of mid-level personnel already in the health system. However, not all of these training programmes had been institutionalised, or led to professional recognition in line with international training standards. Initially (late 1990s - mid 2000s), the tendency was towards shorter, stop-gap measures which would address the immediate need for eye health service provision in countries where very few personnel were available to meet the needs of the population. Training courses varied in duration and led to non-standardised cadres or qualifications (De Souza, et al., 2012). With no formalised system for recognition of these lower level trained personnel, both within host countries and globally, and challenges of ranking, remuneration, career path-ing and competing workload priorities, the need for standardised training emerged.

There emerged also a need to rank all training in optometry globally according to a competency model, for purposes of transfer of skills within and between countries and regions, as well as for standardised recognition of levels of training. The World Council of Optometry devised a Global Competency Model for Optometry Training (World Council of Optometry, 2005). This addressed the need for standardising levels of training across both the developed and developing worlds.

The Competency Model outlined four categories of scope of practice relating to levels of training as follows:

Table 3: World Council of Optometry Global Competency-based Model

Level	Competence	Description
1	Optical Technology Services	Management and dispensing of ophthalmic lenses, ophthalmic frames and other ophthalmic devices that correct defects of the visual system
2	Visual Function Services	Investigation, examination, measurement, diagnosis and correction/management of defects of the visual system
3	Ocular Diagnostic Services	Investigation, examination and evaluation of the eye and adnexa, and associated systemic factors, to detect, diagnose and manage disease
4	Ocular Therapeutic Services	Use of pharmaceutical agents and other procedures to manage ocular conditions/disease

Optometry training could therefore no longer operate outside the inevitable globalisation movement. Non-governmental agencies therefore recognised the limitation of the much-needed, yet ill-sustainable, shorter training programmes and began engaging in collaborative discussions with various stakeholder groups in affected countries. Reframing the paradigm of training new personnel for refractive service provision required much advocacy and planning; and institutionalising programmes meant that legislative frameworks needed to be reviewed and complied with, and that appropriate host institutions be identified before the implementation of any new training programmes began.

One of the first optometry development initiatives was started in Malawi in 2008, and soon followed by a similar initiative in Mozambique which became the subject of this research. In early 2007, ICEE (now BHVI) had been in discussion with other non-governmental organisations doing work in Africa to establish a Regional School of Optometry for Southern Africa in Malawi. The initiative was intended to reach English-speaking countries in Southern Africa which did not have local optometry training programmes. This became known as the Malawi School of Optometry; the first consortium-led School of Optometry for Africa.

2.6.2 The Mozambique Eyecare Project (MEP)

Mozambique is one of the least developed countries in Africa, and has for many years been described as one of the poorest countries in the world (United Nations Development Programme 2010). The health sector has steadily been recovering following years of civil war and general disruption (Pavignani and Durao 1999). Linguistic barriers enforced through colonialism resulted in Mozambique and other Portuguese-speaking African countries being somewhat isolated in comparison to eye health developments across the rest of the continent. Following independence, there was a massive reliance on donor support to help build Mozambique's infrastructure and capacity, in order to move it from a largely socialist society to a market driven economy. Given the low economic base that the country was starting from, the potential for rapid, uncritical adoption of donor programmes became a huge risk. However, Killick (2005) argued that aid-dependent countries should not have undoubted reliance on foreign assistance to the point of not insisting on its own

priorities, given the highly unequal bargaining position of these governments (Killick, et al., 2005).

Optometry as a profession has either been absent from public health services, or non-existent in Lusophone Africa. This meant that access to primary and secondary eye health services was limited, contributing to the burden of VI on the continent. Refractive services that have reached these countries have been scarce, delivered either through mission programmes, expatriate professionals or untrained business people. The need to improve in-country capacity through appropriate training of locals was therefore acknowledged, leading to the development of the MEP.

The MEP sought the support of Irish Aid; in line with Irish Aid's development mission is to reduce poverty by contributing to the achievement of the Millennium Development Goals (Fig. 7).



Fig 7: The Millennium Development Goals (World Bank, 2015)

In this, it acknowledges the role of higher education in achieving some of these objectives. Tertiary education means that graduates can find employment, or create their own employment and employment for others, purchase cars and houses, have disposable income and engage in the economy of their country in a meaningful manner, cumulatively helping to build the country as a whole. Against this policy position, the MEP was successfully awarded funding in 2007, as a higher education solution to a development problem in eye health.

The MEP can be described as a unique multi-partner, research-driven project in optometry development for Lusophone Africa. The partnership comprised two higher education institutions in the North, a higher education institute in the South, and a development organisation also based in the South (where historically these have been from the North). Prior to the implementation of MEP in 2009, some international NGOs supported other eye-related training programmes in Mozambique in the absence of optometry.

Given the burden of VI on the of African continent, an ambitious transformation of current modes of single-stream optometry training was proposed as a primary care-driven optometric solution to the visual welfare of Africa (Naidoo 2007). The Multiple Entry and Exit Model (MEEM) (Naidoo, 2000) [Appendix 1] was subsequently developed, ensuring that optometry trained personnel in these parts of the world be competent in skills level two and three of the World Council of Optometry's competency-based model in a two-tiered training structure. This was in an effort to address the scope of the need for eye health in developing parts of the world, particularly for basic vision correction needs (level 2), and ocular diagnostic needs for primary ocular disease management where access to ophthalmological care may be limited.

The model proposed that level two graduates, namely Optometric Technicians, could re-enter the educational system to complete level 3 training to qualify as an optometrist if so desired, supporting career progression. By global comparison, level three equates to four years of training, comparable to programmes in the United Kingdom and South Africa (Mashige 2010). However, most well established optometry programmes have now expanded the scope of practice to level 4 which includes ocular therapeutics training, and is typically five years in duration. The model was intended to have maximum impact by producing a high volume of graduate optometric technicians and optometrists, as well as develop capacity for future vision researchers.

Any development initiative, however, requires an enabling policy environment to increase the chances of success of the intended long term investment (Moyo, 2009). Specifically with regards to human resource development initiatives in Mozambique, concerns existed around the absolute shortage of health workers in Mozambique and the absorptive capacity of the health system to scale up programmes (Montelpare 2008). The MEP was however aligned with the strategy of the national health department, as well as broader developmental plans for Mozambique's developmental agenda.

This research was initiated since the MEP was the first major collaborative initiative for optometry development in Portuguese-speaking Africa. While similar projects of this nature had shortly before this been initiated, notably in Malawi and Eritrea, these English-language programmes were designed to primarily benefit their host countries, had fewer partners, and were therefore less complex in scope. Furthermore, given the linguistic context and its potential impact on the roll-out of

project activities, it was necessary to investigate and document the experience of implementing a project of this scale and nature.

The objectives of the MEP were aligned with the Ministry of Health's broader National Eye Care Plan, with the exception of the inclusion of optometry as a profession which is a critical component of comprehensive eye health service provision. The MEP's priority was to establish a sustainable, responsive eye health service delivery chain for the long term visual health of the Lusophone African population. However, the National Eye Care Plan lacked funding support since government's capacity was limited and most of the investment in eye care was taking place by NGOs. Therefore, the Ministry of Health actively sought support from outside partners to help fulfil its broader health care development mission.

2.6.3 Regional training and development collaboration

Regional models of training have been used in other contexts, with regional training centres having been implemented elsewhere in the world. The rationale for these models of training centres on the principle of resource sharing, as well as meeting a skills gap in unserved areas (Montelpare, et al., 2008). In Canada, four regional training centres founded by the Canadian Health Services Research Foundation and the Canadian Institutes of Health Research were established to develop an innovative approach to reach their common goal of increasing capacity in applied health and nursing services research in Canada (Brachman 2008). This initiative showed that the development of regional training centres is complex and challenging. Particularly relating to the programme development and delivery, it

was noted that where a new approach to training delivery is undertaken, with no models to build on, this requires sufficient long term support from individuals committed to the concept of collaboration between universities and key stakeholders. Furthermore, building a network of individuals and organisations can be complex when trying to harmonise different academic approaches, backgrounds and cultures. Such programmes therefore require the commitment of time and targeted resources. Though difficult, it can be done and ultimately contributes to increasing the number of trained graduates in health sciences in areas of need (Brachman 2008).

Despite the challenges facing the development of regional training centres, collaborative partnerships offer the opportunity for organisations to combine resources that benefit all stakeholders either directly or indirectly. In the case of La Trobe University in Canada, and the Alfred Clinical School of Nursing, factors deemed integral to the success of this collaborative initiative included organisational commitment, cooperation and trust, identification of costs and the presence of a formal agreement (Forbes & Strother, 2004). Furthermore, this experience showed that the collaboration itself must be built on cooperative endeavour, willing participation, shared planning and decision-making, a team approach and shared responsibility and power (Forbes & Strother, 2004). Collaboration is essential in the partnership between institutions, and these aspects will be explored in this research.

Partnership frameworks for programmes in the developing world seek to develop, plan and implement strategies that address developmental needs in the respective countries. These efforts have historically been aimed at providing every country

with an opportunity to achieve steady growth (Rosenstein-Rodan 1961) and assist in driving service delivery initiatives, while providing technical support to establish programmes that address critical resource needs. Development initiatives therefore support efforts towards overall health system strengthening in affected countries. While there have been many successes, many initiatives have also been fraught with challenges. In the case of Mozambique specifically, and Portuguese-speaking Africa generally, the human resource need for eye health service delivery within the health system demanded a priority intervention if avoidable VI was to be eradicated in line with VISION 2020.

The estimate of the cost of establishing and operating the educational and refractive care facilities required to deal with VI resulting from URE is approximately US\$ 20 000 million globally. However, the return on investment is potentially substantial. Even the upper limit for the estimated cost of US\$ 28 000 million over 5 years is considerably below the estimated economic cost of VI due to URE; estimated to be US\$ 202 000 million each year. The scale of this return on investment means that correcting VI due to URE provides a good opportunity for global development (Fricke, et al., 2012).

2.7 The need for a framework

Development projects are complex, typically involving multiple role players, inputs and variables; and include social, economic and political dynamics which could affect project outcomes and the long term value of an investment. Having a framework to guide the planning and implementation phases serves to assist in

identifying key processes and needs, as well as mitigating some of the risks inherent in development projects, particularly those of an educational nature.

CHAPTER 3:

A SYSTEMS FRAMEWORK

3.1 Introduction

This chapter will introduce the concept of systems theory as a framework within which this research is housed. It will define and describe systems theory and systems analysis, their origins and applications, and present the reason why this framework was chosen to guide this research.

Theories are formulated to explain, predict, and understand phenomena, as well as extend existing knowledge within the limits of critical assumptions. A theoretical framework is therefore the structure that holds or supports a theory of a research study. It introduces and describes the theory that explains why the research problem under study exists (Swanson, 2013).

3.2 Systems and Systems Theory

A system is an organised collection of parts or sub-systems that are highly integrated to accomplish an overall goal. A system generally has various inputs, which go through certain processes to produce certain outputs, which together accomplish the overall desired goal of the system. If one part of the system is changed, the flow of the overall system is often changed (Free Management Library, n.d.).

A system is said to comprise of four attributes (University of Twente, 2010):

- I. Objects i.e. the parts, elements or variables within the system;
- II. Attributes i.e. the qualities or properties of the system and its objects;
- III. Internal relationships amongst its objects;
- IV. Existing within an environment.

These attributes are all interrelated and generally interdependent.

A system may further be described as being either closed or open. A closed system does not interact with its environment, whereas an open system receives information which it uses to interact dynamically with its environment. Having an open system increases the likelihood of it surviving and prospering. Other characteristics of a system include hierarchy within sub-systems, the need for balance and adaptability (University of Twente, 2010).

Furthermore, systems may be either simple or complex. Complex systems are comprised of numerous sub-systems which each have their own boundaries including inputs, processes, outputs and outcomes geared towards accomplishing an overall goal for the subsystem. Complex systems are usually open systems as they tend to interact with their environment (Amagoh, 2008). A high-functioning system continually exchanges feedback among its various parts to ensure that they remain closely aligned and focused on achieving the goal of the system. Complex systems are designed such that if any of the parts or activities within the system is weakened or misaligned, the system makes necessary adjustments to more effectively achieve its goals (Ladyman, et al., 2013).

Systems theory is broadly defined as the transdisciplinary study of the abstract organisation of phenomena, independent of their substance, type, or scale of existence; which investigates both the principles common to all complex entities, and the models which can be used to describe them (Heylighen & Joslyn, 1992). The origin of systems theory is credited to Ludwig von Bertalanffy, a German biologist who in the 1940s, used this to explain how an organism worked; which could be achieved by studying the transactional processes happening between different parts within the organism. He further emphasised that real systems are open to, and interact with, their environment in a process of continual evolution. He understood that the whole was greater than the sum of its parts. Systems theory therefore focuses on the arrangement of, and relations between, the parts which connect them to a whole (Heylighen & Joslyn, 1992). Using systems theory, we can observe patterns and the way relationships are organised in any living system (Walker, 2012). This approach has since been applied to many fields including management, engineering and psychotherapy (Heylighen & Joslyn, 1992).

The decision to use systems theory as a framework for this research was based on the principles of systems thinking in project management (Kerzner, 2013). While Irish Aid mandated an official MEP evaluation, this was for the purpose of evaluating whether funded the project had met its intended objectives, in contrast to the purpose of this research which was to identify specific implementation challenges over the lifecycle of the project and possible causes for these, which would feed into a proposed project design and implantation planning tool in the form of a systems framework.

The use of systems approaches in qualitative research also allows researchers to deal with complexity, context and other fuzzy phenomena not effectively captured by

conventional quantitative methods. However, qualitative research aimed at “mechanistic” explanations poses a challenge to qualitative data analysis and is limited in accommodating for variations in the data, particularly when reflecting on an individual case study as with the MEP (Glaser & Laudel, 2013).

3.3 Systems Analysis

Systems analysis is a concept developed independently of systems theory, often associated with engineering or computing. It emerged in the 1950s with the development of systems engineering, and became an established way of tackling real-world problems of resource allocation, particularly in the military (Checkland, 1981). It identified that the “system” is made up of many parts; a complex total of equipment, personnel and procedures, and therefore should take into account multiple factors such as financial, technical, political and strategic aspects which affect decisions on an important project.

There are several definitions of systems analysis, which include:

- the study of a procedure to determine the most effective method of executing it to obtain a desired end (Houghton Mifflin, 2013);
- a technique that breaks down complex problems into basic elements whose interrelations are evaluated and programmed into a complete and integrated system (Webster, 1999);
- A method of figuring out the basic elements of a project and deciding how to combine them in the best way to solve a problem (Satzinger, et al., 2012).

Systems analysis applies systems principles to aid decision-makers with problems of identifying, constructing or reconstructing, optimising and controlling a system while taking into account multiple objectives, constraints and resources. As a general methodology, it applies a holistic perspective by taking all aspects of a situation into account and concentrating on the interactions between the different elements. Systems analysis may further specify possible courses of action, together with their risks, costs and benefits. It therefore provides a framework by which judgements can be made in different fields to determine what must be done and what is the best way to accomplish it (Business Dictionary, 2015).

3.4 Systems approach to Development

Quade and Boucher (1968) described systems analysis as “One strives to look at the entire problem as a whole, in context, and to compare alternative choices in the light of their possible outcomes”. They proposed three sorts of enquiry, any of which can modify the others as work proceeds. Firstly, there is a need for a systematic investigation of the decision maker’s objectives and of the relevant criteria for deciding among the alternatives that promise to achieve these objectives. Secondly, the alternatives, including effectiveness and cost, need to be identified taking time and risk into account and thirdly, an attempt must be made to design better alternatives or select other goals if those initially planned are found to be sub-optimal.

Systems concepts include environment, inputs, outputs, processes, goal-directedness, and information (Heylighen & Joslyn, 1992) much like the concepts used in development projects. Systems theory has previously been described in the

context of community development (Tamas, 2000) but has never been applied to the field of development optometry.

A systems framework was chosen for this research since development projects encapsulate multiple inputs, stakeholders and processes, and usually operate within a dynamic environment. Development projects should therefore be viewed in the light of a systems approach, with alternatives evaluated for the best possible outcomes and return on investment for both funders and beneficiaries.

3.5 Conclusion

This chapter presented the theoretical framework on which this research is based and the rationale for its applicability in this study.

CHAPTER 4:

RESEARCH METHODS

4.1 Introduction

Research methodology is the methods, means or approach used to achieve the objectives of a research project (Buchanan & Huczynski, 1997). This chapter will present the methodological approach used in this study, as well as discuss the theory informing the research methods used. Details regarding the research design, approach, study area, sampling strategy and sample population will be discussed. The chapter will discuss the data collection tools used, the data collection, management and analysis processes. It will further discuss reliability and validity considerations, and acknowledge any limitations in the methodology.

4.2 Research Design

The study employed a qualitative, exploratory research design. Qualitative research refers to any kind of research that produces findings not derived by means of statistical procedures or other means of quantification. It produces findings from real world settings where the phenomena of interest unfold naturally (Strauss & Corbin, 1990).

As a form of applied research, qualitative research is a systematic inquiry into a specific area of interest that allows for illumination and understanding of real world phenomena (Hall 2013). It uses a naturalistic approach that seeks to understand

these phenomena in context-specific, real-world settings without manipulating the phenomena of interest (Patton 2001). Qualitative research employs a process of describing and understanding, by seeking the insider perspective (Ellis, 2013). It strives to understand patterns, similarities and differences in the representation of participant's perspectives as conveyed through media such as interviews (Erlingsson 2012), rather than numbers or statistical representations as is the objective of quantitative methods of research.

The strength of qualitative research is its ability to provide complex textual descriptions of how people experience a given research issue (Mack, Woodson et al. 2005) and explore reality as constructed by individuals (Erlingsson 2012). Qualitative methods are also effective in identifying intangible factors, such as attitudinal nuances, whose role in the research issue may not be readily apparent. One of the main strengths of qualitative research is the comprehensiveness of perspectives it gives researchers and the depth of understanding it may permit (Babbie & Mouton, 2007). The challenge in qualitative enquiry, however, is gathering information and generating findings that are useful and applicable to a broader context (Patton, 1990).

A qualitative methodology was chosen because it was most appropriate to answering the research question; since qualitative research is not about measurement, but about understanding phenomena of interest. This was central to the topic of interest and achieving the outcomes of this research i.e. the development of a framework which could not have been achieved with quantitative methods of research which are typically more structured and less flexible (Roller & Lavrakas, 2015). However, qualitative research is not without limitations, some of which have been noted as (Atieno, 2009):

- It does not assign frequencies to any features in the data; therefore rare phenomena receive the same amount of attention as frequent phenomena.
- Ambiguities exist in human language; therefore words or phrases that carry dual meaning could be assigned against either of these in the analysis.
- Findings in the research have not been tested for statistical significance as in quantitative methods; therefore their application may be limited.

4.3 Research Approach

A distinctive feature of qualitative research is its emphasis on understanding areas about which little is known, allowing for emergent description through open, exploratory research questions (Elliot & Timulak, 2005). Exploratory research is a methodological approach that is primarily concerned with discovery and generating or building new theory where little is known about a subject area (Davies, 2006).

There is a lack of research in a public health, developmental approach to setting up schools of optometry. The MEP was one such initiative which provided the opportunity to test development models and strategies of training in the field of eye health, as well as evaluate the project implementation experience in order to extract generic systems recommendations for future projects. Therefore this study, with critical reflection on the MEP, was aimed at gaining insight into, and identifying the lessons from the project's experience, in order to contribute to more informed planning and implementation practices in development optometry; therefore an exploratory approach was used.

In order to improve interventions, there is a need to explain what happens, and describe what would have to be done differently for different outcomes to be achieved. Evaluation encompasses a set of research methods with a distinctive purpose to judge actions and activities for the purpose of enhancing effectiveness (Stern, 2005). Evaluation research has no single definition as it includes various research activities applicable to different contexts (Hulshof, et al., 1999). It, however, involves an in-depth study which uses recognised social science research procedures in a systematic and analytical manner to assess or evaluate a programme (Powell, 2006).

An interpretive perspective seeks to understand the ‘why’ of phenomena of interest, e.g. why it came about, how it unfolds over time and what changes led to what other changes (Elliot & Timulak, 2005). As a systematic study, this research served to utilise the knowledge gained to develop a method of approach (Williams, 2007) to development projects in optometric education projects.

Historically, and more recently, many health intervention and optometric development projects respectively have been initiated with the support of donor funding. There is therefore a need for studies on effective strategies for the development and implementation of these interventions, as an evidence base to support maximum investment returns on donor money, and the achievement of development outcomes.

4.4 Research Methods

Interviews were chosen as a means by which to collect the primary data for this research project as they explore people’s perceptions and experiences, giving

understanding to the area of interest. An interview is basically a conversation or discussion between an interviewer and a participant (Avon Primary Care Research Collaborative, 2015). It is an attempt to understand the world from the subjects' point of view and unfold the meaning of their lived experiences (Kvale, 1996).

Qualitative interviews are exploratory in nature and useful for capturing and describing programme processes, and exploring participants' experiences in dynamic settings. As a data collecting instrument, interviews may be structured (with fixed, but usually open ended questions) or semi-structured (where the discussion can be more flexible). Structured interviews usually contain more closed-ended questions which require the interviewer to ask the same questions, in the same way and order. Semi-structured interviews, on the other hand, involve a series of open-ended questions based on the areas the researcher would like to cover (Mathers, et al., 1998). The researcher is not obliged to maintain the same order of questioning; but rather an open-ended, semi-structured strategy for obtaining the data which encourages participants to elaborate on their accounts, and supports flexible inquiry as areas of interest evolve during the interview process.

In this research, a semi-structured interview guide [Appendix 2] was used to address key topics of interest in the research. Open-ended questions provided the interviewer with the opportunity to probe areas of interest raised by the interviewee, or elaborate on the original response in more detail (Mathers, et al., 1998). This is because open-ended questions are designed to encourage a full, meaningful answer using the subject's own knowledge and/or feelings; which is the opposite of closed-ended questions, which encourage a short or single-word answer. Open-ended questions also tend to be more objective and less leading than closed-ended

questions (Carroll, 2013). This was in keeping with the exploratory design of the study.

Interviews for research or evaluation purposes are generally directed by an interviewer or researcher who is in charge of structuring the questioning aimed at promoting understanding (Sewell, 2015). Interviews can occur face to face, or by telephone. Face to face interviews are preferred where the subject matter may be sensitive or the interview may be lengthy (Mathers, et al., 1998), and they generally allow for a greater degree of flexibility. In programme evaluation, open-ended responses to questions provide the researcher with quotations, which are the main source of raw data (Sewell, 2015).

In this research, the interviewer used probe questions to explore the participants' experiences relating to the project. These probe questions facilitated the exploration of ideas and the extraction of descriptive quotes which gave insight into the lived experience of the interviewee. This method of interviewing allowed the participant to describe what is meaningful or important to him or her, rather than being restricted by predetermined categories. In this way, participants felt more relaxed or candid, as the interview was more conversational in nature. It also allowed the interviewer the flexibility to probe for more details and ensure that participants were interpreting questions correctly, using the researcher's own knowledge and experience to explore interesting ideas or themes that were raised by participants (Mathers, et al., 1998). Each interview is therefore unique, drawing on the individual informant's particular experiences and ability to communicate those experiences (Elliot & Timulak, 2005).

4.5 Research Process

The researcher followed a sequential process in implementing the research (Fig 8).

This included:

- Identifying the research context;
- Defining the sample and sampling strategy;
- Development of the research tool;
- Data collection;
- Data analysis; and
- Cross-data validity checks.

Figure 8 represents the flow of activities in the research process.

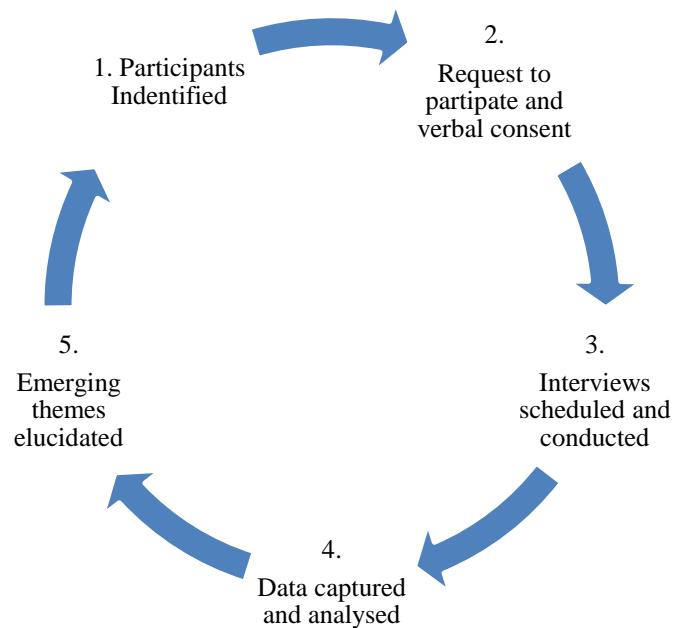


Fig.8: Research Process

These activities will further be described in their sub-components.

4.5.1 Study location

The project was implemented in Nampula, Mozambique, within a largely Portuguese speaking context. Universidade Lúrio was the local partner and the site of implementation of the project's education activities. External project partners were English-speaking, based in Ireland and South Africa within more established higher education and development institutes respectively.

4.5.2 Sampling

The sample population consisted of all MEP personnel and partner representatives in Mozambique, Ireland and South Africa. Purposive sampling was used in order to recruit people who fit the criteria of desirable participants (Babbie & Mouton, 2007). Subjects were selected based on the researcher's knowledge of the population and their potential contribution to the area of research interest. A total of 21 people were identified as key informants; chosen based on their individual roles in the project, as defined by the following eligibility criteria:

- a) Involvement in the conceptualisation or design of the project;
- b) Responsible for implementing the project; and /or
- c) Directly affected by implementation challenges relating to the project.

Eligible participants were approached in person or via email, briefed on the research and reason/s for their selection and invited to participate in the study. One identified KI agreed to participate in the research, but did not avail themselves for an

interview, and two could not be interviewed due to scheduling and logistical challenges across countries. Therefore, eighteen key informants were ultimately successfully recruited to the study. The sample was representative of all official partners and key project staff (Table 4).

Table 4: Designation of interviewees included in the study

Category	Number of Interviewees	Designation/s
Partner 1 (BHVI) South Africa	4	Global Programmes Director
		Director for Human Resource Development
		Programmes Manager: Africa
		Sub-regional Manager: Southern Africa
Partner 2 (UL) Mozambique	4	University Rector
		Senior Faculty Member
		Administrative Director
		Coordinator: Optometry
Partner 3 (DIT) Ireland	1	Head: Optometry Department
Partner 4 (UU) Northern Ireland	1	Faculty representative: Optometry
Project Team	3	Project / Grant Director (DIT)
		Project Manager
		Project Administrator (DIT)
Faculty	4	Optometry Lecturing Staff (UL)
Research Student	1	Scholarship recipient

4.5.3 Data Collection

Data was collected in a phased approach which supported the development of themes for the analysis phase. The data collection process is outlined in Table 5.

Table 5: Data collection and analysis approach

Phase	Description of process	Who interviewed	Result
1	Initial Data Collection and Analysis	Faculty Project Manager UL administrative officials	Pilot data collected
2	Coding of Phase 1 raw data	-	Initial codes identified
3	Second round of data collection	Programme Coordinator Faculty Project Manager	Emerging themes identified
4	Coding of new data	-	Codes compared, corrected and adjusted
5	Third round of data collection and analysis to close existing gaps	Project initiators Partner representatives University rector Project Administration team Postgraduate research student	Provisional set of conceptual categories
6	Themes and sub-themes identified	-	Basis for presenting results and developing framework

In order to provide basic organisation for the interview, an interview guide was developed to ensure that the key lines of inquiry relevant to the areas of interest in the research were pursued with each participant (Patton, 1990).

4.5.3.1 Designing the research tool

This research employed a semi-structured interview guide approach as described by Patton (1990), to address key topics of the research. These guides typically have an outline of topics or issues to be covered, but allow for variation of wording or the order of questioning, in keeping with the more conversational style of interviewing (Sewell, 2015).

The interview guide provided three broad topics of interest, each with several open-ended probe questions for the interviewer to explore. The broad areas of interest in the interviews included:

- **Project design**
 - e.g. *“What was the strategy behind the project design?”*;
- **Project planning and roll-out**
 - e.g. *“What do you feel were the challenges encountered implementing the research agenda within the project?”*; and
- **Partnership**
 - e.g. *“Describe the structure of the partnership”*.

The key components investigated in each of these are represented in Table 6.

Table 6: Topics of interest

TOPIC OF INTEREST	COMPONENTS INVESTIGATED
Project Design	Strategy Developmental considerations Sustainability factors
Project Planning and Implementation	Frameworks Roles and responsibilities Challenges
Partnership	Structure Dynamics Benefits

The research tool was piloted using 2 individuals working within the project, with the tool being deemed adequate to capture the required information. This data was not included in the analysis.

Two categories of KI were identified, with the level of questioning varying according to the type of KI. The first category of informants was classified as ‘senior project representatives’. These interviews emphasised aspects of a more strategic nature such as the rationale for the project, project model and partner selection, as well as stakeholder engagement and implementation challenges at a strategic level.

The second category of informants were broadly grouped in a ‘project implementers’ category. This included faculty, project managers and administrators and researchers who were questioned on more operational aspects relating to the project such as resource and curriculum challenges, implementation of the research

agenda and liaison with partners. Where informants fit into both categories, questions were both strategic and operational in nature.

4.5.3.2 Interview scheduling and process

Interviews were scheduled via email or telephonically at a time convenient for both the interviewee and the interviewer. In-person interviews were held in Mozambique, Ireland and South Africa between March 2012 and September 2014. The meeting place was made convenient for the respondents either at their respective offices, homes, or other public venue suitable to both parties. While convenience was a key factor determining the location for the interviews, situational factors such as noise were taken into account and kept to a minimum by the researcher so as to optimise the interview.

4.5.3.3 Conducting the interviews

Interviews were conducted in English and were on average, 75 minutes in duration. All participants from Mozambique were sufficiently competent in the English language; therefore there was no need for translators during these interviews. Verbal consent was confirmed at the commencement of the interview, with participants being advised that data would remain anonymous. Verbal consent was deemed sufficient as the study presented minimal risk to participants. Each participant was given a code to protect their identity, in keeping with ethical issues in the conduct of research, and each KI was only interviewed once.

While audio recording was intended, there were reservations on the part of some interviewees in the earlier stages of the data collection regarding traceability or disclosure of identity, given tensions that existed within the project at the time. Therefore, audio recording was suspended and verbal data was manually transcribed during all interviews to maintain standardisation.

The first interview was conducted in March 2012, and the final interview in April 2015. This meant that data was collected over a time expanse of approximately 3 years. This was not the planned roll-out, but rather, convenient in terms of interviews being conducted around the time when project meetings took place and face-to-face data collection could occur. While this was not ideal, the researcher did note that there was a more emotive tone to interview responses with interviews conducted earlier in the project when many of the implementation and partnership challenges were at their peak, as opposed to a more reflective approach by all later in the project, when most of the challenges had been resolved.

Overall, my experience conducting the interviews is reflected in the following summary:

- Most participants were candid about their experiences and the challenges experienced within the project;
- The interviews largely followed an academic-conversational style, with free flow between intended questions and emerging issues;
- One Mozambican participant in particular was somewhat guarded in his choice of words within responses, which could be as a result of the socio-cultural respect for hierarchy in Mozambique as well as the potential

political ramifications of one's utterances, which was the general environment in Mozambique.

- The interviews all achieved the desired outcome as intended in the research and no major challenges were encountered.
- Most interviews were similar in length, and KIs were always given an opportunity at the end of each interview to raise any additional thoughts not yet elicited, ensuring that all relevant inputs were captured.

Regarding my role as the researcher, having had a professional association with most key informants prior to this research, I feel that this may have influenced the depth of responses from participants as there may have been a natural expectation that the researcher already possessed insight into some of the challenges of the project. However, all attempts were made to present a neutral background and probe as if there had been no prior experience.

There also existed the threat of bias in the research based on this prior exposure, and the fact that both supervisors of this research were also KIs on the project. However, where these tensions between supervisor / KIs own perspectives or experiences versus reports or quotes from other KIs emerged, the researcher had to defend the results and balance the reporting with the additional perspectives raised, analysing possible reasons for differing perspectives or reporting.

Audio recording of interviews is preferable as it ensures that the 'whole' interview is captured, allowing the researcher to go back and listen to the recording for cues that may have been missed the first time (Mathers, et al., 1998). Audio recording also supports active listening. However, it is a known phenomenon in social

psychology that situational factors influence a person's responses in interview situations as people generally like to present themselves in a good light. This effect may be more pronounced when an individual is aware that their audible responses are being recorded. Participants may also tone themselves down to give a socially acceptable answer or their responses may be influenced by their awareness that what they say is being recorded and will be analysed in the research project (Vicsek, 2007). Depending on the situation, respondents may also have anxieties relating to the recording of what may be considered 'sensitive' data (Parker & Tritter, 2006), as evidenced in this project. Therefore, while the limitations of not audio recording were noted, the researcher took a calculated decision to capture interview responses manually as a means of maintaining consistency, and to encourage openness and honesty in responses particularly around areas of sensitivity relating to the project and/or partnership.

There are acknowledged challenges with writing fast enough to record live interviews (Zinsser, 2006). Experienced interviewers advise requesting interviewees to pause when they are talking faster than can be transcribed, which was applied in this research. Interviewees were advised at the start of the interview that they may be interrupted at certain points during the interview to allow for accurate capturing of data. The researcher was however an experienced scribe and the use of shorthand was employed, which is recommended practice in these situations. In all interviews, there was a good understanding between the researcher and interviewee regarding this process, and interview flow was therefore not negatively affected.

The act of writing during an interview process has noted benefits (Eliot, 2010), which include:

- keeping the researcher's brain engaged with the material;
- allowing for more interactive interviewing due to frequent checking with the respondent;
- the researcher is more likely to identify ambiguous comments which need immediate clarification;
- it affords the interviewee periodic breaks during which they can gather their thoughts;
- it allows the respondent more time to change, augment or improve their answers; and
- it engenders more thoughtful responses.

In most cases during the data collection, attempts were made to review the interview notes within 48 hours of the interview to translate the shorthand to complete sentences so the richness of the data was not lost.

Skype allows the possibility for audio and video interviewing and encourages interviewees who have time and place limitations for face to face interviews to participate in research (Janghorban, et al., 2014). One interview was conducted via Skype as the candidate was based in North America.

Video conferencing for research purposes requires that interviews occur in conditions conducive for both the interviewee and interviewer as any external distractions may inhibit concentration and data gathering. In this case, however,

both participants were physically located within a closed room in their respective home environments at a time which allowed for minimal distractions.

The initial open-ended probe questions were descriptive in nature; designed to provide a starting point from which the researcher could probe the subject's perspective on the areas of interest. The interview was subsequently led by the responses received, with the researcher guiding the respondent back to the main areas of interest where significant diversion occurred. This approach was informed by the framework of exploratory interest; therefore no pilot phase was administered. An example of the open-ended probe questions used to initiate discussion on a topic of interest is shown in Table 7.

Table 7: Closed vs. Open-ended questions

Example of a close-ended question	Example of an open-ended question
Do you feel that the partnership model was an effective one?	Share your thoughts with me regarding the partnership model.

Acknowledged challenges with interview-based research include the fact that the researcher may, consciously or unconsciously, influence the responses of the subject (Mathers, et al., 1998). Furthermore, bias may be introduced in the manner of:

- asking the questions,
- recording the answers,
- interpreting the answers; and
- coding the answers.

The researcher had extensive experience with interviewing techniques, both from a clinical perspective and prior professional roles in research and development work. Specific literature on qualitative interviewing techniques for research purposes was also consulted prior to the commencement of the data collection.

Leading questions and personal perspectives on the issues raised were avoided, while active listening was employed in order to appropriately frame the next question and avoid inaccurate subjective interpretations (Patton, 1990). Attempts were made not to interrupt respondents, except for purposes of negative reinforcement i.e. to bring the respondent back to the topic of interest or to clarify a significant point if required.

Open-ended questions were posed, such as:

- Describe the rationale for the project as you understand it.
- What was the strategy behind the proposed project model?; and
- Discuss the experience of implementing the proposed project model.

From these probe questions, the interviewer and interviewee were able to diverge and pursue a particular idea or response in greater detail. The researcher was also able to immediately seek clarification regarding the subjective responses of participants. Where the interviewee may have had difficulty answering a particular question, or provided only a brief response, the interviewer used cues or prompts to encourage the interviewee to consider the question further. The researcher signalled when the interview was nearing an end by summarising key insights from the

interview and allowing the respondent to either add or correct any information they felt would add more value to the study.

Interviews as data collection instruments are not without their limitations. Factors influencing the course of the interview can include (Vicsek, 2007):

- characteristics of interviewee;
- interactional factors between interviewer and interviewee;
- environment (public places, scheduling);
- time factors; and
- content.

Overall, the experience interviewing KIs was a positive one, with most respondents being open and honest about their experiences. Attention was paid during the data collection process to objectivity and neutrality on the part of the interviewer, with particular effort on not influencing the process and avoiding any bias. However, it was naturally difficult to separate the prior project knowledge and experience of the researcher from this process.

4.5.3.4 Sourcing documents for validation

Every research method has limitations. Therefore, combined use of more than one method, to test for consistency, strengthens a study (Patton, 1990). Since some subjectivity is inherent in the nature of interview-based research, document review was chosen as a means by which to validate interviews results.

The analysis of written documentation has been noted as a useful addition to other data collection methods and enhances validity of the primary data (Kawulich, 2005). The types of documents used may vary considerably. What is important, however, is that these documents are reviewed in a consistent way. Content analysis was used in this research, which encompasses searching in text for recurring words or themes and trying to make sense of them (Patton, 1990).

Documents included in the review were official correspondence relating to the project, specifically:

- The MEP funding proposal, which was the original concept document submitted to the Funder;
- Minutes of project-related meetings amongst partners and related stakeholders such as the Mozambique Eye Care Coalition;
- Official biannual reports to project's funder (Irish Aid / Higher Education Authority);
- The official Memorandum of Understanding between MEP partners;
- Draft curricula and related amendments proposed for the MEP; and
- Email correspondence between partners relating to various aspects of the project.

Relevant documents for the period 2009 – 2011 were sourced on request from project partners and analysed against interview data. The limitation with this method of validation, however, is that not all issues raised could possibly be validated by available document content. Therefore a constant, comparative approach to interview data was used as a secondary means of validation.

4.5.4 Data Management

Data handling and ethics around data collection are an important consideration in research. 4.5.4.1 and 4.5.4.2 outline considerations in this regards in this research.

4.5.4.1 Ethical considerations

Ethical approval was granted under the MEP by Dublin Institute of Technology (DIT)'s Research Ethics Committee. Informed consent was verbally obtained from participants and respondents were assured of their anonymity in the aggregated findings. Participant data was coded so as to ensure anonymity.

Verbal consent is generally acceptable for research with minimal risk, or where a loss of confidentiality is the primary risk (Lavery, 2007). Participants in this research were informed on:

1. the purpose of the research, to establish rapport;
2. what was expected of them, including the amount of time required;
3. the fact that participation was voluntary and that he /she could withdraw from the research at any time with no negative repercussions; and
4. the principle of anonymity which would be applied.

Participants were also provided with an information document which contained contact information of the researcher in the event of any questions or problems related to the research.

4.5.4.2 Storage of data

Field notes were photocopied with the originals filed in hard copy and placed in secure storage accessible only to the researcher, to protect them from tampering or physical damage. These records will be kept for a period of five years. Data was also transcribed electronically, with soft copy files encrypted and kept in a password-protected computer. These files were backed up to an external location in the event of loss or damage to the primary computer. Furthermore, the researcher's personal computer had routinely updated antivirus software to further protect data from malware.

4.5.5 Data Analysis

Data analysis is a process by which the data you have collected is transformed into meaningful and useful information. It can be a very complex process, with many possible approaches that are specific to the data collection methods used (Avon Primary Care Research Collaborative, 2015). Analysing qualitative data requires the researcher to recognise patterns in data. Initial data may also influence how the data collection process progresses (Burnard, et al., 2008).

There are two fundamental approaches to analysing qualitative data: the deductive approach and the inductive approach (Burnard, et al., 2008). Deductive approaches involve using a predetermined structure or framework to analyse data i.e. the researcher imposes his/her own structure or theories on the data and uses these to analyse the interview transcripts. This approach is applicable where the researcher

is aware of the probable participant responses. While this approach is relatively quick and easy in comparison to the inductive approach, it is inflexible and can potentially bias the analysis process as the coding framework is decided in advance, which may limit theme development.

The inductive approach involves analysing data with little or no predetermined theory, structure or framework and uses the actual data to derive the structure of the analysis. This is a much more comprehensive, time consuming approach and is applied where little is known about the area of study. It is, however, the most common approach used to analyse qualitative data, and was the method employed in this study (Burnard, et al., 2008).

Various analytic procedures provide a means for drawing inductive inferences from data and distinguishing the phenomenon of interest from the 'noise' in the data (Shamoo & Resnik, 2003). The primary method of analysis used was that of thematic content analysis; which is a descriptive presentation of qualitative data. This involves analysing transcripts, identifying themes within those data and gathering together examples of those themes from the text (Anderson, 2007). It is considered the most foundational of qualitative analysis techniques and is largely descriptive in nature.

There is a reciprocal relationship between the theory and research in deductive and inductive approaches respectively (Blackstone, 2012). In the inductive approach, the researcher begins by collecting data that is relevant to his or her topic of interest. The researcher then looks for patterns in the data, working to develop a theory that would explain those patterns (Blackstone, 2012). The main focus of inductive reasoning is exploring new phenomena or look at previously researched phenomena

from a different perspective. It requires the researcher to begin with a completely open mind without any preconceived ideas of what will be found. It further involves analysing data with little or no predetermined theory, structure or framework (Burnard, 2008) and uses the actual data to derive the structure of the analysis. This reasoning was therefore more applicable to the topic of interest in this research.

The data analysis was undertaken thematically by a process of coding. In the coding process, every reasonable attempt was made to allocate names for themes from the actual words of participants and to group themes in manner that directly reflected the texts as a whole. While sorting and naming themes required some level of interpretation, true “interpretation” was kept to a minimum in the study (Anderson, 2007). Once the data has been analysed, the researcher examined existing theories in order to position the findings within the discipline.

Comparative and thematic analyses are often used in the same project, with the researcher moving backwards and forwards between transcripts, memos, notes and the research literature. In the process of comparative analysis, data from the different sources were compared and contrasted to identify any new emerging themes until no new issues arose.

The analysis of data must be systematic and organised, so that the researcher can easily locate information in the data set and trace provisional results of the analysis back to the context of the data as presented in Table 6 (Elliot & Timulak, 2005). The analysis procedure used in this research followed an established process for interpretive qualitative research (Fig. 9) as documented by Elliot and Timulak (2005).

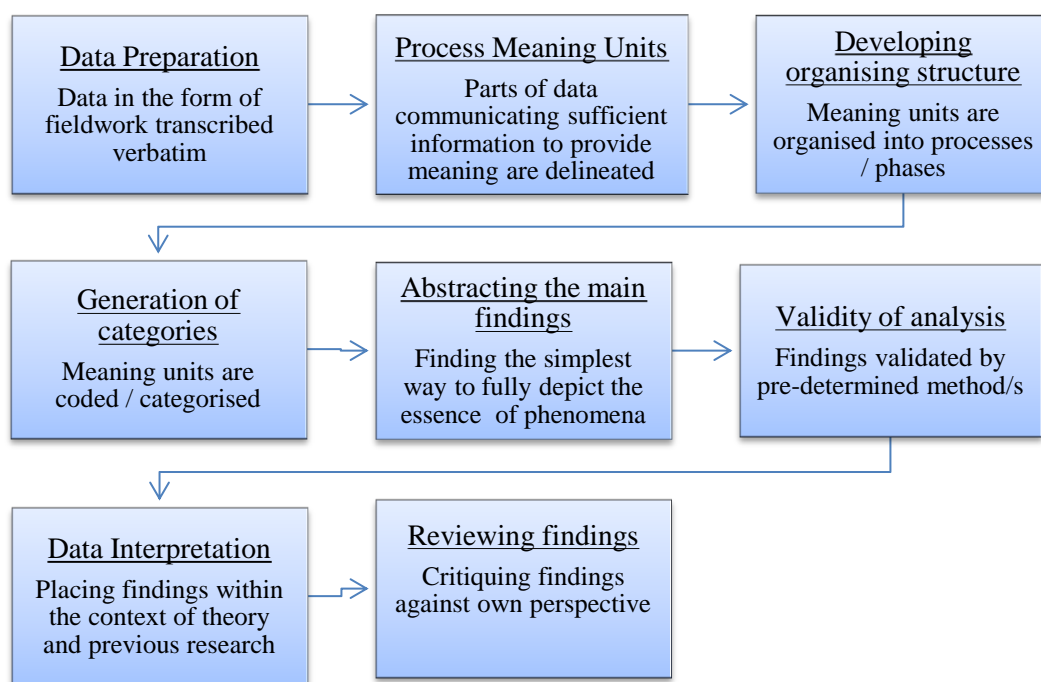


Fig. 9: Process for interpretive analysis followed in this research

Secondary sources of information were examined in relation to key issues or concerns emerging from primary data.

4.5.5.1 Data familiarisation

In qualitative research, data analysis may begin during, or immediately after, the first data is collected; with this process continuing throughout the study (Burnard, et al., 2008). In the pre-analysis phase, the whole data set in the form of interview notes was read so that the researcher gained an overall picture of the results from the interviews. Interview transcripts were read and re-read, with the researcher making comments or assigning a label in the margins to sections of text as a first step in organising the data into meaningful topics. During this initial reading, data was

edited for spelling or shorthand corrections, and emerging insights were jotted down as memos.

4.5.5.2 Delineating meaning units

Raw field notes constitute the undiagnosed complexity of the reality in question. Simplifying and making sense of that complexity requires content analysis and a classification or coding system to manage the data (Patton, 1990). In this study, data analysis began with identifying patterns in the interview data, categorising them, and then labelling or coding them. Parts of the data communicating sufficient pieces of information which provided meaning to the researcher were highlighted and all descriptions relevant to the topic of inquiry were marked with a highlighter. From the highlighted sections, distinct units of meaning were separated by a colour break, each constituting a meaning unit.

4.5.5.3 Organising the data

The ‘meaning units’ were assigned codes linked to the respondent code e.g. Key Informant (KI1), and given a consecutive numbering sequence i.e. if there were twelve meaning units for KI1, these were assigned numbers 1-12 as they followed each other in the interview transcript. This constituted the basic structure for the analysis process. Broad headings were assigned to the meaning units to establish an initial organising framework by which to sort the data.

In cases where meaning units included information relevant to more than one broad category, these were included in both.

4.5.5.4 Generation of categories

Coding is the process whereby raw data is transformed into a standardised form suitable for analysis (Babbie & Mouton, 2007). The development of themes arose from a process of pattern recognition and constant comparison of data from various sources. Sub-themes were also identified and organised to establish linked patterns.

Figure 10 shows the flow of analysis.

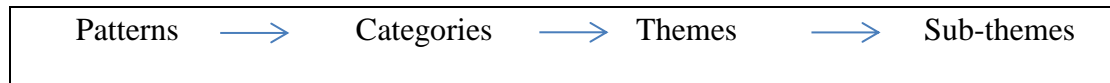


Fig.10: Flow of data analysis

Meaning units were coded into categories evolving from the patterns embedded in the data. Across the transcripts, meaning units with similarities represented a ‘category’ which was formed through an interpretive process by the researcher.

While the initial labelling, either a word or a phrase for a category, was derived from the first occurrence of some meaning in a meaning unit, these were refined during the analysis process to incorporate similar meanings from subsequent meaning units, informed by the analytical and theoretical ideas developing during the research. An example of some key identified categories and their respective

links to the primary data, with relevant credibility checks are depicted in Table 8 below.

Table 8: Generation of categories from raw data

CATEGORY	LINK TO RAW DATA	CREDIBILITY CHECK
Communication: Roles and Responsibilities	<p>‘The implementing people didn’t know about the project or what the funding was for.’</p> <p>‘Initially it was difficult to see clearly what was the project and what was the optometry course itself.’</p>	<p>Analysis of several meeting reports confirmed a lack of clarity around roles and responsibilities, on the basis of questions raised around the issues of partner responsibilities.</p> <p>The Memorandum of Understanding contained only broad areas of partner responsibility.</p>

The overall categories were re-read at a later date and categories regrouped if necessary. This interactive process facilitated understanding of the data as the analysis process evolved, and in some cases meaning units were assigned to different categories as a result of this process. Categories were collapsed, subdivided or relabelled as appropriate, if required. The process of grouping and regrouping or re-labelling categories was concluded when the researcher was satisfied that the categories reflected the interview transcript as a whole and the point of saturation had been reached. Meaning units categorised within individual transcripts were cross-analysed with other cases for similarities.

The main findings or categories were abstracted as exemplified in the following tables (9 and 10):

Table 9: An example of the initial coding framework

Interview Transcript	Initial Coding Labels
Researcher: 'Describe the rationale for the project.'	
Respondent: 'We were motivated to start training optometrists at university level to create a critical mass in the country'.	Identification of need
Researcher: 'How were students selected for the programme?'	
Respondent: 'The country's training strategy is that universities are obliged to have students from across the country.'	Recruitment and selection strategy

Table 10: An excerpt from the final coding

Final coding framework	Initial Coding Labels
1. New cadre development	Identification of need Model of training Recruitment and selection
2. Project Duration	Planning projections Capacity development Funding terms

In the final analysis, meaning units thought not to contribute significantly to the areas under investigation were excluded.

4.5.5.5 Interpretation of the results

Qualitative interpretation is intended to promote understanding rather than eliciting causal linkages, with understanding sometimes being expressed in terms of explanation (Babbie & Mouton, 2007). However, where causal linkages become apparent, these interpretive insights may be presented in order to add value to the study's results. Interpretation goes beyond description, attaching significance to what was found and making sense of findings by offering explanations, extrapolating lessons or drawing conclusions.

Qualitative findings are judged by their substantive significance as compared to statistical significance in quantitative research (Babbie & Mouton, 2007). The results of this research were located within the development context it represented, as well as within previous research findings or theory. Results deemed to have substantive significance were those:

- for which there was evidence in support of findings from other sources;
- which increased understanding of the phenomena of interest;
- which were consistent with existing literature;
- which had discovery significance i.e. broke new ground; and
- deemed useful for the purpose of informing development practices.

Several KIs were quoted in the results, and while not all interview respondents were quoted, all interview data was utilised in the analysis phase and development of themes.

4.5.5.6 Critiquing the results

Qualitative interviewing involves a continuous process of reflection on the research, as well as an awareness of one's role in the research. Reflexivity is the process of examining oneself as researcher within the research relationship, and involves examining one's assumptions and preconceptions, and how these affect research decisions such as the selection and wording of questions. Awareness of the researcher's voice and perspective is therefore an important factor in understanding and depicting the results authentically. Furthermore, reflecting on one's relationship to the respondents and how the relationship dynamics affect responses to questions is also an important consideration (Hsiung, 2010).

Reflexive inquiry can be triangulated to include the perspectives of self, the research subjects and the research audience, illuminating issues of voice (Babbie & Mouton, 2007). The researcher believed fundamentally in a systems approach to projects and programmes. Having been part of the preliminary discussions in the establishment of the MEP, the researcher had a deep personal interest in understanding where the project may have succeeded or failed against principles relating to systems theory and how development project processes could be improved on. The researcher's expectations were that there were valuable lessons to be learnt from this experience which could be applied to other development projects. Therefore, the perspective was one of constructive inquiry.

The study sample was made up of multiple nationalities, including people from optometry, higher education, research and development backgrounds. Expatriate project personnel who were recruited to the project had a keen interest in making a

development contribution to Mozambique. The majority of MEP-recruited optometry faculty at UL were from Colombia, Spain or Portugal (Figure 11).



Fig. 11: Expatriate faculty from Colombia, Spain and Portugal

Representatives of partner organisations included academics, administrators, researchers and development practitioners from Ireland, South Africa and Mozambique at middle-to senior management levels. This mix of respondents lent itself to diverse representation and perspectives in the respondents' voice.

4.5.5.7 Dependability and transferability of results

Qualitative research is an interactive process; an unfolding story in which the writer gradually makes sense of the data and the whole research experience. In this way,

some subjectivity is inherent in the analysis process, with the written study becoming a complex train of thought within which the researcher's voice and view of others are interwoven (Holliday, 2002). The term validity is used to describe how well the research tool measures that which it intended to. While every effort was made to maintain objectivity, the researcher's voice could possibly have influenced the direction of the interview process.

Document analysis refers to various procedures involved in analysing and interpreting data generated from the review of documents relevant to a particular study (Kohlbacher, 2006). Document review was a useful methodological tool by which to validate the interview data in this study and eliminate or minimise bias in interpretation.

4.5.6 Development of a Framework

A framework can generally be defined as a supporting structure around which something is built, or a system of ideas that is used to plan (Cambridge University Press, 2015). Drawing from both the positive and negative results out of the research, the researcher was able to develop a proposed guideline for this purpose.

Factors that were considered as potentially strengthening optometric projects in a developmental context were extracted and interlinked in the form of a project development and planning framework.

4.5.7 Limitations

Error of interpretation, which occurs when the interviewer has to make a subjective judgement as to how to code an answer, is a factor for consideration in qualitative research. However, it is most likely when the potential answers are pre-coded and the interviewer has to attempt to fit the respondent's answer into an existing category. The open-ended nature of questioning used in this research allowed for a natural evolution of themes, with the researcher being conscious of the need to remain objective and use only the responses of interviewees to shape the findings rather than prior exposure knowledge, which was rather used as a validation tool in order to avoid bias.

4.6 Chapter summary

This chapter has explained the research methods and approach used in this study, as well as highlighted methods for extracting thematic content from raw interview data. It described procedures for validation of data, as well as potential limitations in the methods. It further explained how the results of the research were applied to the development of a guiding framework for development projects in health education.

CHAPTER 5:

PLANNING FOR DEVELOPMENT PROJECTS IN EYE HEALTH: IMPLEMENTATION LESSONS FROM THE MEP

5.1 Introduction

Development work is typically underscored by some moral or ethical inclination to address a particular social or economic problem and thereby, make the world a better place (Metcalf, 2010). Projects have been the mainstay of development work for several decades (Gittinger, 1984); with health and education projects historically prioritised by aid agencies (Save the Children Ethiopia, 2014, Australian Bureau of Statistics, 2012, Heyneman, 2005). This is because health and education are seen as the foundation for human development. Expanding access to health and education is therefore a central element of any project aimed at eliminating poverty or reducing inequality (International Finance Corporation, 2015).

All projects are carried out under certain constraints, commonly called "the triple constraint" which includes cost, time, and scope. Figure 12 represents the Project Management Diamond; a tool used to balance the demands of a project towards a successful outcome (Haughey, 2011).

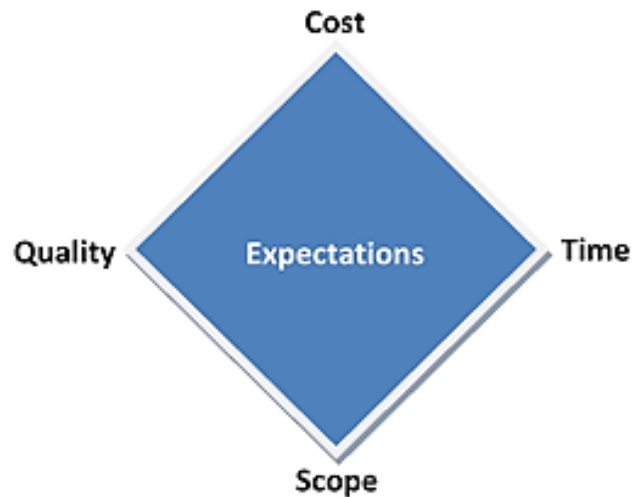


Fig 12: The Project Management Diamond (Haughey, 2011)

The components of the project management diamond have a symbiotic relationship (Launi, 1999). If one component of the diamond is altered in any way, it has an influence on the other project components, altering the diamond shape which would have an influence on the project's ability to successfully deliver on quality outcomes and meet 'customer' expectations.

The well-meaning strategies which drive the philanthropic ideals of individuals, organisations and funding agencies may be driven by economic, political or social developmental imperatives, but often do not give enough attention to the all-important planning phase required of large-scale projects. In many cases, this leads to implementation challenges, failed projects and diluted impact of development funding (Brevard, et al., 2009, Anyaegbunam, et al., 2004). What often appears to

be a rational solution to a practical problem may be an impractical solution to a legitimate development need (Ambrecht, 2014).

Health programmes incur significant start-up costs in human, financial and technical resources, while development funding typically imposes capped budgets and limited time frames for delivery of a project's stated outputs. Experience with implementing funded community-based healthcare training programmes has shown that many projects are discontinued before activities reached full fruition, or soon after the initial seed funding ends, drawing attention to factors that influence the long-term viability of health intervention programmes (Shediac-Rizkallah & Bone, 1998). An important component of evaluating a project's success therefore is the determination of whether it produced the results, impact and quality intended.

One of the main reasons highlighted for the failure of projects is that the scope of the project is either not fully defined or understood from the start, with research further suggesting that projects imposed by funding agencies may be less likely to be sustained than those which are a result of a mutual negotiating process between funders and host governments (Shediac-Rizkallah & Bone, 1998). Furthermore, development projects are more likely to be sustainable when using bottom-up planning to determine priorities, and being reflective of community needs in project design (Tango International, 2009). A participatory approach to development, involving input of the local people, is therefore more likely to succeed as compared to a 'project' approach where pre-specified objectives and timeframes are imposed (Shediac-Rizkallah & Bone, 1998).

The Durban Declaration on Refractive Error and Service Development, passed in 2007, at the inaugural World Congress on Refractive Error, resolved to prioritize solutions toward refractive service development (Naidoo & Jaggernath, 2012) by addressing the paucity of services, eye health personnel and infrastructure resulting in the global burden of VI. Following this, and the acknowledgement by the WHO that VI due to URE was a major public health problem (World Health Organization, 2012), the development of schools of optometry as institutionalised programmes for the training of professional optometrists in the developing world gained momentum (Minto, 2008).

Previous development initiatives aimed at addressing the need for eye health in impoverished countries included, amongst others (Pearce, 2012):

- direct service provision by volunteer optometrists making short trips to areas of need;
- providing short skills training in refraction; and
- the dispensing of recycled spectacles.

Overall, it was agreed that the majority of these efforts had no sustainable impact, and were not aligned with best practice or VISION 2020 public health principles (Pearce, 2012).

Another strategy included training mid-level workers such as nurses, ophthalmic technicians or community-based staff in refraction. Concerns with this strategy included that (Prasad, 2005):

- training was non-standardised;
- retraining personnel when previously trained staff changed jobs was costly; and
- there was no clear career structure for trainees within the health system.

Overall, these strategies did not represent a sustainable solution to addressing the burden of URE as trainees were often assigned other duties within the hospital setting, leaving refractive care once again as a neglected area of health service provision and ultimately resulting in a loss of clinical competency (Palagyi, et al., 2010).

A leading advocate for the development of refractive services globally noted the limitations of these stop-gap training strategies, and published a paper in 2000 entitled: “Towards a new model in Optometric Education” (Naidoo, 2000). In this he proposed a radical shift in the nature of refractive care projects in Africa in the form of structured optometric education. A novel, adapted model of training was theorised, which would develop focused cadres of refractive care personnel, including professional optometrists, in an integrated training structure termed a ‘Multiple Entry and Exit Model’ (MEEM) of training in optometry. The MEEM was proposed as a more sustainable solution to address HR and service gaps facing eye health in the developing world, and was the birth of a strategic developmental direction which later gave rise to the ‘Schools of Optometry’ agenda within the development.

The establishment of optometry schools is however complex and costly (University of North Carolina Board of Governors, 2014). It has, therefore, not been a primary

strategy of development organisations since it requires long term commitment and huge financial investment. However, given the limitations of previous human resource development strategies, the training of optometric personnel was seen as a more sustainable solution to meeting the long term eye health needs in underserved areas.

The early 2000s saw developments in optometry training in countries across Africa in response to VISION 2020: The Right to Sight (Holden & Resnikoff, 2002). However, these programmes were all in English. Africa however, represents three main linguistic regions i.e. Anglophone (English), Francophone (French) and Lusophone (Portuguese). Language has been considered an important source of power and identity; with cultural barriers, which include language, being cited as a barrier to investment (Harzing & Feely, 2007).

A leading thinker on language and development once noted that *"For meaningful development to take place, emphasis needs to be placed on education... If the majority of the population is to be reached, the country's indigenous languages need to be used for learning and teaching"* (Moore, 2005). Given that there was no optometry training in all of Lusophone Africa, a need and development opportunity was identified for a Portuguese-language optometry for Lusophone Africa.

5.2 MEEM: A developmental approach to training optometrists

The MEEM of training optometrists, as originally theorised (Naidoo, 2000), was accepted as a plausible solution to the unmet need for refractive personnel when in 2008, a regional school of optometry based in Malawi was launched. The Malawi project proposed a tiered training structure producing 2 levels of graduates in line

with the integrated MEEM model i.e. two year-trained diploma level Optometric Technicians with mainly technical skills, and four year trained optometrists with clinical diagnostic skills. These 2 levels would be linked by a re-entry system where Optometric Technicians could re-enter the system to upgrade their qualification to full optometrist should they wish to do so.

The model was expected to support a public-sector driven ‘massification’ strategy i.e. produce large numbers of graduates to meet the needs of communities at lower levels of care within the public health system, primarily in centres away from the main cities where the majority of impoverished people live. The Malawi School of Optometry project thus became the pilot for the MEEM.

In February 2009 the MEP became the second collaborative School of Optometry initiative, representing the first Portuguese language optometry training programme in Africa proposing a regional MEEM training strategy.

The drivers for collaborative projects in optometry, however, remained unknown. Furthermore, the concept of the MEEM as an adapted model of training in optometry was untested. Born out of research development funding as part of Irish Aid’s ‘Programme of Strategic Cooperation between Irish Aid and Higher Education and Research Institutes 2007-2011’, the MEP presented the opportunity to test the development, implementation and evaluation of this model of optometry training as a means to addressing Africa’s eye health training needs; and in the case of the MEP, in the predominant language of this Portuguese-speaking region.

The MEP became the focus of this research as it represented a new type of development project and model of training in optometry. Using the MEP as a case study, this research sought to evaluate the drivers for collaborative, development-led

projects in optometry, as well as factors informing theorised training models. The research further sought to identify specific challenges experienced in the design and implementation of the planned MEP model and thereby make specific recommendations which would serve as guidelines for future development projects of this nature. This chapter presents a descriptive analysis of the practical challenges encountered in the design and implementation of the MEP model.

The ‘schools of optometry’ strategy has gained momentum within the development arena amongst organisations seeking to support the achievement of VISION 2020: The Right to Sight’s objectives. The results of this research will therefore serve as a valuable guide for stakeholders in optometry and other eye health development projects.

5.3 Methods

This study followed a qualitative research design as described in detail in the preceding chapter. Ethical approval was granted under the MEP by DIT’s Research Ethics Committee, with data collected by means of KII and document review methodologies. The focus of thematic analysis, for results presented in this chapter, was on questions relevant to the theme of ‘implementation’.

5.4 Results

The results herein presented addresses Objectives 1-4.

A significant point of confusion highlighted during interviews was that there was an initial lack of distinction between the ‘project’ and the optometry ‘programme’. The MEP represented a five year project within a broader programme for optometry development in Mozambique.

“The project started one year after the course was launched. Initially it was difficult to see clearly what was the project and what was the optometry course itself. There was a perception that the project was there to support the course, but it was not understood at the time that the project had its own life and activities [sic].” - Key Informant 2

While many people use the terms ‘project’ and ‘programme’ interchangeably, there is a distinct difference between the two terms. A project typically relates to a set of specific activities within a defined timeframe, while a programme has a broader scope, often consisting of several ongoing projects within an extended timeframe (Evaluation Toolbox, 2010). However, the lack of distinction between the MEP and the optometry programme reportedly created misunderstanding amongst partners.

“Initially, the implementing people [local stakeholders] did not know about the project. They didn’t understand what the funding was for.”

- Key Informant 8

Expectations from the university were reportedly that the ‘project’ would be responsible for all activities relating to delivery of the optometry ‘programme’, while this was not the case. However, partners eventually came to an understanding of the project’s activities in relation to the longer term programme after much discussion, “*and this merger was good for the course*” [Key Informant 2].

The following table (Table 11) summarises the themes and sub-themes relating to planning and implementation which emerged and which will be discussed accordingly:

Table 11: Themes and Sub-themes

Chapter	Theme No.	Theme	Sub-themes
5 PLANNING AND IMPLEMENTATION	1	Development funding as a strategic project driver	Value of Professional networks Nesting projects within research grants Mutually beneficial partnerships Funding cycles vs. Project cycles
	2	Challenges implementing the project	No situational analysis Perceived top-down approach Competing programmes Linguistic factors Planning frameworks Faculty recruitment
	3	Reasons behind the failure of the MEEM	Legislative changes Stakeholder analysis Developing collaborative solutions Local acceptance: Quality vs. Need
	4	Project planning factors	Budget Educational Programme Research Staffing Capacity Development Language

5.4.1 Access to funding: An opportunistic driver for development strategies

It emerged from the interviews that the potential availability of, or access to funding via Irish Aid presented an opportunity for the partner organisations involved in the MEP to come together for mutual benefit and construct a proposal for a school of optometry in Mozambique. Several interviewees raised the fact that Mozambique would not necessarily have been an immediate country of investment, given the barriers to entry that existed, including language and cost.

“ICEE was already driving the Schools of Optometry programme as a strategy. DIT and Irish Aid wanted to support developing countries through research....Generally BHVI as an organisation would not have gone into Mozambique quickly due to the language barrier if it were not for the funding. Using existing organisational funds would have been costly [sic].”

- Key Informant 4

Therefore the availability of funding was a catalyst for a mutually beneficial development partnership which resulted in the formation of the MEP.

5.4.2 The value of networks and relationships

Links with key individuals from other stakeholder groups in eye health and development proved beneficial in that it was by this means that the potential funding opportunity for Mozambique was identified and presented to one of the key project partners.

“ICEE was then approached by an Irish Partner who brought to its attention that money was available from Irish Aid to partner with a Southern Africa institution, and Mozambique was identified as a country to invest in. As such, the initial project concept was opportunistic. However, this was appropriate as Mozambique and Lusophone Africa had no school of optometry and the needs for eye care were great.” - Key Informant 1

It was apparent from the above narrative that the Irish Aid funding call created the momentum for a Lusophone solution for eye health. A partnership subsequently ensued between BHVI, DIT, University of Ulster and Universidade Lúrio in Mozambique as the local implementing partner. The MEP was therefore opportune, highlighting the value of establishing and maintaining strategic connections across sectors which could give rise to new project opportunities.

5.4.3 Nesting projects within research grants

Mozambique was the only Portuguese language country in Africa receiving official development assistance from the Irish government, qualifying it as a beneficiary for the establishment of collaborative partnerships within and between higher education (HE) and research institutes in Ireland and relevant beneficiary countries as part of Irish Aid's Programme for Strategic Cooperation 2007-2011 (Irish Aid, 2006).

The funding call had a strong research theme which supported Irish Aid's policy objectives of (Irish Aid, 2006):

- a. The establishment of collaborative partnerships between higher education institutions and research institutes in Ireland and targeted beneficiary countries;
- b. Development in the areas of health and education; and
- c. Capacity building of higher education and research institutions.

Given that there was no optometry training in Mozambique prior to the MEP, there was a need to first train optometry personnel to achieve the objective of capacity building in the area of eye health, education and research. Proposal writers were able to craft the project proposal in a manner that aligned with the Irish Aid's research agenda by first advocating for the establishment of the School of Optometry and the production of human resources, with a parallel and subsequent complementary system for creating the desired research outcomes in Mozambique through the MEP. The proposal writers were influenced by the fact that the Malawi school had implemented a similar model and no evidence existed of the success,

barriers and outcomes of this initiative. These research results would thus feed into the broader development of the School of Optometry strategy.

“Development funding is needed where at new institutions in developing countries, massification of higher education is pursued in a country but the state is not able to finance new institutions. While the state can provide for salaries and administrative costs, equipment, infrastructure and research is very under-funded [sic].” - Key Informant 2

The Irish Aid development funding therefore created the opportunity to make a long term contribution to eye health and education in Mozambique and in Africa. Irish Aid’s development objectives could be met through a research-led partnership for the establishment of optometry training in Mozambique, with capacity building in the area of research, and generation of evidence for further human resource development in optometry through the MEP (Fig. 13).

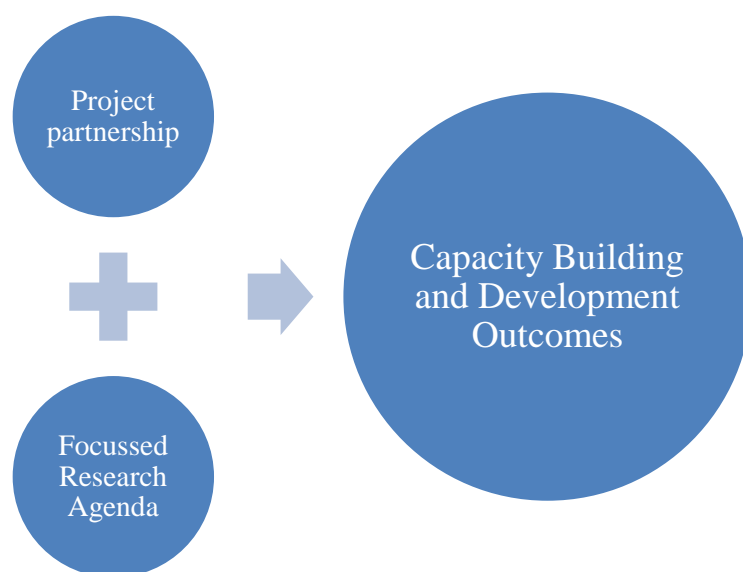


Fig 13: Research-led partnerships can facilitate capacity building and the achievement of long term development outcomes

5.4.4 Mutually beneficial partnerships

It emerged from the interviews that the MEP delivered benefits not only for the beneficiary country, but for all partners involved. In addition to Irish Aids policy objectives and the obvious developmental benefits to Mozambique through the MEP, implementing partners also benefitted from the project in several ways as outlined in Table 12.

Table 12: Implementing partner benefits

Dublin Institute of Technology (DIT)	Brien Holden Vision Institute (BHVI)	University of Ulster (Northern Ireland)
Exposure to development work	Expanded project reach in Africa	Exposure to development work
Increased research opportunities	Opportunity to test novel model of training	Sensitisation to developing country challenges
Expanded international profile	Enhanced organisational profile	Staff contribution to curriculum development
Student exchange programme	Access to additional development project opportunities	Postgraduate research Involvement
Access to other development project opportunities	New research opportunities	Closer collaboration with DIT

Therefore, funded projects not only have gains for beneficiary countries or institutions, but also for external implementing partners. Development projects can therefore serve as a means for organisations to test strategies, grow profiles, expand networks, attract new funding, learning about the approach to development work, etc.

5.4.5 Funding cycles vs. Project cycles: Secondary development opportunities

A general sentiment emerged from the interviews that the project was too short in duration. The Irish Aid grant was for five years, but projects partners were in agreement that the project term should have been longer; with some suggesting

between ten and fifteen years as a more suitable time frame within which to implement a complex project of this nature. At the end of the initial five years of the grant, some of the core deliverables such as the establishment of an institutional vision centre, and the employment of graduates within the public sector, had not yet been realised. There was an acknowledged mismatch between the funding cycle of five years, and the longer-term outcomes needing to be achieved through the project. Project partners recognised the need to extend the project term to allow for necessary capacity building and strengthening of the programme prior to handover, which are factors critical for sustainability.

“The project therefore applied for a no-cost extension of one year from Irish Aid which was successfully awarded and these objectives were then reached within the sixth year.”– Key Informant 5

While the MEP addressed the need for the training of optometrists for Lusophone Africa, a longer term need for faculty development was also identified; not just in Mozambique, but across Africa. Following the MEP funding term, further Irish Aid funding was successfully awarded for a new three year project to train 50 faculty members from optometry schools in Africa, since faculty development had been a neglected area of attention by countries and institutions alike. This secondary initiative, ‘Human Resource Development for Eye Health’, served to strengthen Irish Aid's primary investment towards optometry training in Africa (Dublin Institute of Technology, 2012).

5.5 Challenges implementing the project model

The MEP proposed the novel MEEM approach to training optometrists for Mozambique and Lusophone Africa, following closely behind the Malawi School of Optometry pilot. Elsewhere in the world, professional optometry training averages four years in duration, resulting in a minimum qualification of bachelor's degree in optometry (Padilla & Di Stefano, 2009). The proposed MEEM offered a developmental approach that would see graduates from the mid-level, two-year programme exit the system to provide basic eye care services including preventative care, refraction, dispensing and screening for ocular pathology at primary levels of care within the public health system.

“There was a clear intent on developing schools of optometry that trained graduates for the public sector unlike the predominant ethos of schools in the West that primarily trained optometrists for the private sector.”

- Key informant 1

The MEP encountered significant resistance to this proposed training model and it became apparent within the first year of its attempted implementation that the MEEM was not an acceptable curriculum structure and training model for Mozambique.

Challenges implementing the proposed model in Mozambique included:

5.5.1 Absence of a thorough Situational Analysis

The absence of a thorough situational analysis was cited by several KIs as the biggest contributor to the failure of the MEEM in Mozambique. There was general consensus amongst external partners that not enough time was spent conducting a thorough situational analysis in Mozambique. Much of this shortcoming was grounded in the time restricted nature of the grant, with project partners wanting to realise the output of graduate optometrists within the five year project term, and to avert delays in student recruitment, which was also identified as a key project outcome.

This meant that external partners did not have a full understanding of the specific context and inherent educational challenges within which the project would be implemented when designing the theoretical model, and were dependent on the local partner's knowledge, views and interpretations. Time spent conducting a thorough situational analysis would likely have brought to the fore the impending changes in the legislative landscape, and informed the training and curriculum structures more appropriately. Furthermore, Mozambique faces significant challenges at secondary school level.

“In some cases there are extremely high teacher-student ratios of between 1:70 and 1:110. It is impossible for students to learn in this way. When these students get to university, it is a nightmare”. - Key Informant 2

Specific challenges were very weak mathematics and science bases, subjects critical to success in the optometry curriculum, with a gradual decline in the quality of learners coming into university. This reportedly contributed to high attrition and low throughput rates in the optometry programme, which cast a shadow on the

ability of the MEP to produce the large numbers of graduates it proposed. Given the resource limitations in the project's earlier years, this dynamic could not automatically be balanced by higher intake numbers, which would support the desired massification strategy, as an even further burden would be placed on the under-resourced programme. As a result of the programmatic and structural challenges facing the MEP, intake numbers remained low across the term of the project, in contrast to the large numbers of graduates the programme intended to produce. In the absence of a full contextual understanding of the Mozambican realities therefore, a lot of time was wasted in the implementation phase “*learning on the go*” [Key Informant 4]. This was confirmed by Ilal and Kleibl (2014) who reported that the project adopted a ‘learning-by-doing’ approach.

5.5.2 A perceived top-down approach

There was resistance from local partners to the proposed ‘2+2’ MEEM model, partly based on the perception that external partners were trying to ‘impose’ a prescribed model that was inappropriate for Mozambique’s educational and developmental needs. This was described as a heavy-handed, top-down approach that was not inclusive of local input; with local partners reporting that they were not consulted in the design of the curriculum structure and model.

“Curriculum development: I felt that this aspect did not work out nicely initially. It was not conducive to the university’s plans. We had some pressure from the project to reduce the training time (2 year graduates), but had to fight

hard. The project should not determine how local programme is carried out. It must be according to the law. So the university pushed for 4years [sic].”

- Key Informant 2

While the sentiment from local partners was that they were excluded from the curriculum design process, external partners reported that local officials *were* consulted on matters of the curriculum. This conflict in reporting suggests that there may have been miscommunication or a misunderstanding on the level of expected input from the local partner in this process, a lack of competence in this regard on the part of local representatives or alternately, that the people consulted were not the one's responsible for implementation.

5.5.3 The existence of competing programmes

A mid-level cadre of eye health workers similar to the proposed Optometric Technician role, namely Ophthalmic Technicians, have been part of the health system in Mozambique for several decades. A refresher / up-skilling programme was being run by another development agency in a separate part of the country for Ophthalmic Technicians at around the same time of implementation of the MEP. Though shorter in duration and not addressing the full scope of the proposed Optometric Technician training programme, the existence of this Ophthalmic Technician cadre was seen locally as addressing the need for a lower level personnel managing refractive error within the public health system in Mozambique. There was, therefore, very little support behind efforts to find an alternate means to

implement the MEEM structure and create a new lower level of optometric personnel.

5.5.5 Linguistic factors

The development of optometric teaching materials in Portuguese also presented a challenge for the MEP. Translators from Latin America were engaged, proving a costly, unbudgeted expense to the project. Another challenge was that there are variations of Portuguese across these two regions, including the fact that non-optometric personnel were involved in translating the teaching materials. The lack of understanding of technical terms relating to optometry or unavailability of English ophthalmic terms which do not have a direct translation in the Portuguese language also made this a time-consuming, complicated exercise.

Indications are that institutional leaders in Mozambique are moving towards English as a medium of instruction. New programmes in engineering being developed in another part of the country are commencing with a 30% English and 70% Portuguese as languages of instruction.

“Eventually we want to move towards 10% Portuguese and 90% English. Students may fail, but it must go in that direction. Why are we still carrying this language that is not taking us anywhere?” - Key Informant 2

This would suggest a local sentiment that Portuguese is inhibiting the integration into a globalised world, and an acknowledgment that the use of the English language is important for the country's development. A student survey analysis conducted at Universidade Lúrio after implementation of the optometry programme revealed that the majority of students reported poor English language skills across reading, writing and speaking tasks (Table 13).

Table 13: MEP Optometry students' reporting of competencies in English

(Chan, et al., 2015)

ENGLISH	Poor		Average		Good	
GENDER	Female	Male	Female	Male	Female	Male
READ	37%	29.6%	18.5%	3.7%	0%	7.4%
WRITE	40.7%	29.6%	14.8%	7.4%	0%	3.7%
SPEAK	37%	25.9%	18.5%	11.1%	0%	3.7%

Not surprising therefore, is the fact that 63% of the students indicated that they prefer to be taught in Portuguese (Chan, et al., 2015).

The majority of the learners (63%) were also reportedly from urban locations (Chan, et al., 2015) where the expectation would be that exposure to the English language would likely be higher than that of learners from more rural settings; yet the same percentage of students indicated their preference for being taught in Portuguese.

However, MEP faculty who were predominantly Spanish speaking, a language similar to Portuguese, reported that while there were attempts on their part to both learn and teach in Portuguese, a mixing of the two languages was problematic.

Students' prior exposure to Spanish teachers diluted their own use of "*the real Portuguese*" and understanding of correct Spanish words. Therefore, multiple complexities in language choice and usage were noted.

5.5.6 Planning Frameworks

The absence of a thorough situational analysis meant that structural project plans were not adequately informed by the local reality.

"There was merely an extrapolation of what goes on in Africa and the known/ perceived need [sic]." - Key Informant 3

While some respondents reported that there were detailed plans or strategies around certain sub-components of the project, there was a general agreement that the project as a whole was not planned in sufficient detail. Senior partner representatives reported that there *was* detailed planning as documented in project plans, and that consultation with key role-players had taken place. However, project staff reported that some of the planning was 'circumstantial' and not stringent enough, with a lack of a clearly defined overall implementation strategy to guide the project.

Possible reasons for this contradiction in reporting could be that senior representatives are generally involved in macro view, while project implementers are more concerned with the 'micro', operational view which requires much more detailed planning. These findings are supported by findings of the external evaluation, commissioned by Irish Aid as part of their funding review processes, which pointed out that while the project document included a logical framework with indicators, there was no baseline, and targets for some of the indicators were not defined. It suggested that the collaborating partners should have given more attention to this component in the planning of the project as a mechanism by which to constantly improve the quality of project's performance. However, due to the expansive nature and scope of the project, coupled with the time-bound nature of the grant, it would be reasonably impractical to foresee all potential challenges or plan for the micro detail of certain aspects of the project particularly relating to the educational programme, which may account for some of the negative reporting in this regard.

Furthermore, while there was engagement with local officials at a senior level, faculty reported that staff within the university did not have a clear understanding of the project and its plans, suggesting that dissemination of project information to all relevant stakeholders was lacking. While detailed project descriptions to all university staff may not have been necessary, identifying and engaging with key administrative or academic structures who would likely be involved in processing approvals for certain aspects of the project may have been beneficial since stakeholders are more likely to support the development of a programme if they have prior understanding of it (Ritchie & Chappidi, 2008).

Another weakness noted was the reliance on the local partner to engage key stakeholders in-country. Though this was the agreed approach within the partnership, external partners were not kept informed about key structural challenges such as the impending legislative changes that would affect the project's training model.

“When working on a really complex project, mistakes are inherent in the project.” – Key Informant 11

It was agreed that collective engagement would likely have averted many of the risks and challenges experienced. However, regular meetings were held to review and revise plans accordingly.

5.5.7 Faculty Recruitment

The recruitment of faculty also initially presented a challenge in that there were no Portuguese speaking optometrists locally or regionally. Faculty were recruited from the predominantly Spanish speaking countries of Spain and Colombia, with a minority from Portugal. While the university initially considered partnering with optometrists from Brazil, a close ally to Mozambique, their financial demands proved unaffordable.

Attracting suitably qualified Portuguese-speaking optometrists with a minimum Masters level qualification, as preferred by the institution, was also a challenge since optometry is still a developing profession in most Portuguese-speaking countries. In addition, there was little incentive for highly skilled foreigners to give up their jobs or security for an unknown situation in a poorly developed country, except for their interest in giving back to society and having a new, more challenging professional experience in international development, particularly in light of the relatively low salaries the project was able to offer. However, as the project gained an international profile, it became easier to attract suitably qualified optometric faculty to the project.

For the first year of the MEP, which consisted of basic science courses, there were no optometric faculty employed in the programme, which was seen as a huge drawback:

“By the end of the first year the students were completely lost. There were no (senior) optometrists guiding them or explaining what optometry was about; the basics of optometry.” - Key Informant 2

While not having faculty in place at the commencement of the project may have been a cost saving decision on the basis that there was no optometry teaching required during this period, students had no frame of reference to what optometry was and the absence of professional optometrists in the form of faculty who would serve as mentors and a means of professional identity created a lot of uncertainty

around the credibility and viability of optometry as a profession, and the future of optometry in Mozambique among the student population.

Furthermore, much of the ground work such as driving curricula approvals and establishing clinical facilities, which occurred much later in the programme's implementation, could have been undertaken during this time and likely facilitated a smoother roll out of the academic programme.

5.6 Reasons behind the failure of the MEEM structure

Several key factors emerged through the KIs as to the reasons behind the failure of the MEEM.

“There was good thought to the model, but not enough time to work out the details [sic].” - Key Informant 5

In general, it was agreed that the concept of a developmental two-tiered training structure was good in theory, but impractical in reality for several reasons.

The important sub-components of this theme are presented and discussed in more detail below.

5.6.1 Legislative framework changes

Higher education legislation in Mozambique had been amended soon after the launch of the MEP without the knowledge of the external technical partners. This ultimately led to the failure of the MEEM as it presented the project with little option but to revise this training model since diploma programmes could not be housed within universities and the minimum expected duration of training for professional qualifications in the country was three years.

When it became evident that the MEEM structure could not be implemented, efforts were made to engage alternate institutions to house the diploma programme. However, these institutions did not seem to appreciate the need for, or the opportunity this project's training offered, nor were they willing to work with a separate institution in implementing this linked training programme. After much deliberation and efforts to seek an alternate mechanism by which to implement the MEEM, the project conceded to a single minimum programme of four year bachelors level training, for qualification as an optometrist, as in the case in countries such as South Africa and Ireland.

5.6.2 Stakeholder Analysis and Advocacy

Results from interviews with senior project officials revealed that two key government ministries in Mozambique were not adequately consulted prior to the design and inception of the MEP. Meetings were held with the National Eye Care Coordinator, a representative of the Ministry of Health, with Universidade Lúrio responsible for engaging the Ministry of Education in the initial stages of the

project. External partners relied heavily on this agreed engagement approach on the reassurance from the local partner that the necessary Ministries would be adequately engaged regarding the project. However, it came to light that the Ministry of Education in particular was not adequately engaged nor consulted on the project and proposed programme structure. These results are confirmed by Ilal & Kleibl (2014) who noted that “the MEP has suffered from the fact that there was absence of baseline information, lack of interaction with the Ministry of Education, as well as from the late engagement with the Ministry of Health.”

Reliance on the local partner was therefore noted as a weakness when it became evident that thorough, continuous engagement and advocacy with the relevant Ministries was lacking. Taking collective responsibility for engagement with relevant stakeholders would have averted the back and forth discussions between the external partners and the university on curriculum structure and cadre recognition which “*created a lot of misunderstanding amongst the partners*” [Key Informant 5].

Similarly, it was recognised that the Ministry of Health, which the project proposed to be the main employer of the graduates, should have been invited into the partnership at the inception of the project.

“The issue of bringing the Ministry of Health closer to the project was not key in the beginning but became more important as the project grew”.

- Key Informant 4

This oversight posed a risk to the project achieving its objective of public sector-employed optometrists as, at the time of graduation of the first cohort, the Ministry of Health had still not created posts for optometrists within the public sector.

“Training and government priorities around human resources need to coincide. Therefore, government support of the process is important [sic].”

- Key Informant 1

In the case of the MEP, not inviting key government ministries into the project partnership or as part of a task team to design the optometry training programme for Mozambique proved a significant limitation. Direct consultation with senior officials in the Ministry of Health would likely have been more fruitful than relying on an individual as a conduit to relevant government entities.

The MEP further proposed a regional model of training. For economic reasons, countries that were similar geographically and politically were grouped together and it was assumed that a shared institution could provide education for an entire region given the cultural and linguistic ties between populations (Fricke, et al., 2012).

“The regional concept was an idea not thought through thoroughly. There were no plans or ideas on how to realise this.” - Key Informant 5

While a few students from other Lusophone countries had been recruited to the education programme in Mozambique by the end of the project, there was general acknowledgement that the model had failed in its full intent.

“From the strategic framework this was being encouraged, but whether there was commitment to a fully integrated regional school or whether these students were just treated as foreign / international students was not clear. Buy-in at a higher level was required for this to be realised.”

- Key Informant 3

There had been no formal consultation between project personnel and relevant officials in other targeted countries prior to the implementation of the MEP. Furthermore, the project had no clear plans on when or how to implement the regional model, who would carry the responsibility for advocacy with other countries, or where the financial cost of supporting students in Mozambique lay.

“The concept behind the regional model was economically viable; to have 1 regional hub rather than having costly schools in each country where population sizes don’t justify the financial investment.” - Key Informant 5

Buy-in at a higher level within targeted countries is, however, required for a regional model of training to succeed. With no targeted advocacy undertaken to gain support from other countries for this regional training strategy, this may likely

remain a limited concept in practice. External partners agreed that the framework behind the model was good, but that its application was difficult as it required a detailed longer term strategy.

5.6.3 Developing collaborative solutions

The MEEM represented a pre-designed model which was proposed as a solution to Mozambique's optometry training needs. While some engagement with local officials had taken place for input on the curriculum structure, available evidence suggests that this was largely confined to module placement and content later in the process, rather than input into the MEEM structure as a whole. Local partners indicated perceptions that an inappropriate model was being offered to Mozambique.

“For a new programme, one should spend time looking at other models of training versus the reality in Mozambique.” - Key Informant 6

“The university is governed by law. It cannot give less than graduate courses. We must do things with a long-term view and not a band-aid approach.” – Key Informant 13

There were, therefore, divergent views amongst internal and external partners on what would be appropriate for Mozambique. There was a reported lack of consultation regarding the model, with local KIs reporting that the course structure

was being imposed on the university, leading to the misunderstanding. Senior officials in Mozambique indicated their view that planned training programmes should be universally acceptable and aligned with accepted models of training in other parts of the world, in keeping with other indications of their developmental ambitions for global integration. This raises the question as to what extent local partners in development projects feel pressurised to not criticise initial approaches, so as not to endanger funding or compromise a partnership, yet later express their disapproval when models do not work.

“Just because Mozambique is a poor country, does not mean it will support a short term needs approach. The programme should be aligned with other courses in the world to make it easier in terms of mobility.” - Key Informant 6

This indicates recognition on the part of university officials of the impact of globalisation on the country's training strategy and the likely aspirations of some graduates to move to other parts of the world. The acknowledged risk that graduates may choose to leave the country to look for new opportunities elsewhere appeared to foster a moral obligation to train them to a level that would be recognised internationally. This was an interesting finding in that development-based training programmes are aimed at addressing local needs; and a graduate leaving a country generally does not serve the country or project's immediate development ambitions.

5.7 Project planning factors

Project planning involves outlining project activities, budgeting and risk assessment, delineating partner responsibilities, and planning for staffing requirements. The results presented were supported by the evaluation report which revealed that more involvement and participation of the local partner in the coordination and planning processes would have contributed to increased ownership of the programme by the local partner.

5.7.1 Budget

Most KIs could not adequately describe the budget structure for the MEP. There was broad acceptance of general areas of financial responsibility amongst partners, but no clear costing aligned to these from the individual partner perspective. While the IA grant covered most of the primary costs relating to Optometric Education, Collaborative Research and Public Dissemination, there were reported unbudgeted costs within the project, and no clear breakdown on the financial contributions from each partner over the five year term. Furthermore, there were expectations from the local partner that the funding would cover all costs relating to the ‘project’, while external partners had an expectation that the university would carry the administrative responsibilities related to the programme. This supports results from this research that there was a lack of distinction between the project and programme. This also further underscores findings that partner roles and responsibilities were not clearly defined and that the budget lacked the necessary detailed in its breakdown. Ilal & Kleibl (2014) cited as one of its findings, budgetary concerns; in particular

relating to the key component of Vision Care Service Delivery and the longer term establishment of vision centres in public health units.

“The project failed in delivering one of the key commitments that all parties thought it was supposed to i.e. to have equipment delivered to the districts. This was to be a complementary phase of the training; however, there is no equipment for them out there and there is a risk that graduates placed in the district may lose some practical skills. This is very concerning. Since the project is now over, who will take care of that?” - Key Informant 2

While there were some concerns over the budget and its limitations, financial management of the project was noted as smooth and in general properly implemented. The recommendation that Irish Aid consider funding a second phase of the programme to enable Universidade Lúrio to further develop crucial components for the intended impact of the MEP (Ilal & Kleibl, 2014) is supported by subsequent results of this research that the funding cycle was out of synchrony with the project’s developmental objectives.

5.7.2 Educational programme

There were mixed views regarding the level of training required by Mozambique on the parts of the technical partners and the University. There was a perception on the part of the University that duration of training is related to quality:

“If we followed the perceptions of the project and reduced the programme to 3 years, the quality or standards of the programme could have been lost completely.” “Experience has now shown that even five years may be necessary to qualify graduates of a higher standard than current [sic].” - Key Informant 2

Perspectives of the Ministry of Health in Mozambique (as represented by the National Eye Care Coordinator) and the University regarding appropriate level of training differed greatly.

“There was an existing health science faculty where all graduates worked in the Ministry of Health so their first reaction was good. However, there was a difficulty with the last person who was required to approve the programme. While her reaction on the surface was good, she was not that comfortable with the idea though she didn’t say no outright. Her preference was for lower (mid) level trainees such as technicians (not trained at university but at a basic level). However, the university could not provide that level of training [sic].”

- Key Informant 2

Proposed reasons for the Ministry of Health ’s unspoken resistance to the 4 year trained optometrist were that optometrists could possibly be viewed as competition for the few ophthalmologists in the country; a sentiment which existed in countries such as Brazil and Portugal who both had an influence on developments in Mozambique. When it became evident that the MEEM structure could not be

implemented, the MEP then agreed to support existing in-country efforts to upskill Ophthalmic Technicians, by strengthening the refractive component of the training programme which was being implemented at around the same time. While this did not form part of the MEP's planned activities, these efforts were guided by a moral imperative to ensure minimum quality standards in refractive services within Mozambique as part of its overall eye health development strategy.

Several challenges emerged from the research which influenced the implementation of the education programme. These are summarised in Table 14.

Table 14: Challenges implementing programmatic components

Planning component	Challenges identified
Curriculum	Pre-defined curriculum out of context to local realities No defined criteria on requirements for curriculum task team members Internal processes of approval unclear or bureaucratic
Availability of Faculty	Faculty only recruited from year 2 of project – lost opportunity for early programme planning No local professional identity or frame of reference
Faculty Recruitment	Faculty recruited on average 1 year contracts and in some cases 3 months. Impacted consistency and growth of programme
Student recruitment and selection	Centralised national recruitment and selection Unclear criteria regarding applied entrance requirements (<i>possibly related to high failure and attrition rates</i>) Gender imbalance
Materials Development	Procuring academic material from established institutions for translation due to concerns over intellectual property Translating optometric terminology into academic text by non-optometrists

	Regional nuances in Portuguese language impacted interpretation
Resource acquisition	Procurement and customs clearance delays
Establishment of Institutional Vision Centre	Securing site for institutional training centre
Research	Identifying and attracting suitably qualified Mozambicans for postgraduate research development opportunities
Administration	Processes unclear or undefined Bureaucratic structures and sign-off procedures
Facilities Planning	Equipping district refractive centres

Faculty reported that significant cultural adjustment was required and that it would have been valuable to have prior understanding of secondary level education in Mozambique before joining the project; and that undergraduate teaching in Mozambique was different to that in the rest of the world. However, faculty were motivated to make a contribution to a more holistic educational experience such as non-optometric, soft skills transfer.

The majority of the expatriate lecturers had no formal academic teaching experience prior to joining the MEP. Feedback from interviews was that taking up faculty positions within the MEP proved a steep developmental process in a context of other logistical challenges and necessary adjustments. Additionally, there was no prior pedagogic skills assessment or training for new faculty recruits. This was supported by evaluation findings that there was an inadequate preparation or induction process for new faculty.

“The training needs to be unique to Mozambique. You need an understanding of secondary level education as what is expected is not given.” – Key Informant 10

Other faculty-related challenges included a difference in scope of practice across the different faculty-represented countries, reported as posing a challenge in delivering a unified curriculum. Work overload was also highlighted as limiting the capacity of staff to effectively supervise students and conduct research.

Faculty reported the following relating to their experience in the MEP:

- As native Spanish speakers, Portuguese translation for teaching, learning and assessment material proved challenging;
- Cultural and professional dynamics sometimes surfaced within the multinational team;
- Local bureaucratic processes often delayed decision-making;
- Resource limitations impacted efficiency; and
- There were limited opportunities for continuing professional development.

The MEP embarked on capacity development initiatives which included planning for the development of local faculty as part of the on-going development of the profession of optometry in the country. Four students were sent to Brazil to train concurrently with the first intake, and later, the top four graduates from the first

cohort were retained as junior lecturers at Universidade Lúrio. Funding was secured prior the end of the project term, through the Irish Embassy in Mozambique, for a three year project which would facilitate faculty development in Mozambique and an appropriate exit of development partners. The Irish Aid evaluation report however noted that a comprehensive exit strategy was still needed to ensure sustainability of programme activities and to preserve the credibility of the MEP.

Another key reported challenge in implementing the training component was that the project never achieved its goal of having a fixed campus-based clinical training site (Fig. 14). Several reasons were cited for this, which included infrastructure limitations, and challenges between government departments regarding the ownership of land on which the proposed structure was meant to be developed, as well as delays in importation of equipment. While partners did embark on structural design plans and an operational layout of a teaching service centre, Ilal and Kleibl noted the failure in producing, disseminating and discussing widely a concept document clearly outlining the working modalities of the 'Teaching Clinic'. It proposed this as a factor which may have jeopardised Universidade Lúrio's efforts to establish and develop a dedicated, campus-based training facility.



Fig 14: A classroom is converted into clinic space at UL

Despite this, necessary equipment and laboratory facilities were made available to the programme so that the training of students could continue unhindered. Positive feedback on the quality of equipment in the optometry programme was given, however, concerns remained over long term maintenance and stock as no system had been developed for this.

Planning for spectacle provision as part of the MEP also reportedly did not receive priority. While patients were seen by students during their training and found to be in need of spectacles, the programme was not equipped to provide them. This, however, was not part of the IA project plan for the MEP, but rather an extension of what the longer term programme should encompass. The absence of spectacle provision was, however, noted as a shortcoming in a project primarily intended on addressing issues of URE. This demonstrates the concept of scope creep (International, 2016), which refers to uncontrolled changes or continuous growth in

the project's scope beyond what was originally planned, clearly impacting the capacity of the project to deliver on both expected and unexpected outcomes.

Staff, students and faculty were reportedly disadvantaged in the execution of their responsibilities as a result of poor information and communication technologies infrastructure and broadband connectivity in Mozambique, a common problem in poorly developed countries. This, coupled with limited availability of other supportive learning resources such as textbooks, particularly in Portuguese, placed an immense burden on faculty who reported an overloaded work schedule for both staff and students. While it was noted that the quality of technical resources provided by BHVI for teaching and learning support were high (Ilal & Kleibl, 2014), faculty reported frustration at not being able to adapt these for personal use, preference or ease of teaching due to intellectual property restrictions (Table 15). However, for purposes of standardisation and quality assurance, and given the fact that many of the faculty had limited or no teaching experience or postgraduate qualification, this restriction was maintained.

Table 15: Programme planning considerations for faculty development and support in new programmes

Programme factors	Faculty considerations
Small faculty complement with limited prior experience	Teacher-centred approach
Prescribed lecture content and materials	Work overload
Technology limitations	Limited capacity for independent scholarship or development

There was an overall need also to improve the selection of students and identify more clear entrance criteria in order to recruit suitable students for the course of optometry. Furthermore, the need to create greater awareness of the optometry programme and profession amongst high school graduates and potential students was also noted.

As a result of the multiple challenges experienced implementing the education component of the MEP, which was central to the project, one of the KIs described not planning appropriately for a development project with limited timeframes as *‘putting train tracks in front of a moving train’* (Key Informant 3).

5.7.3 Research

Research as a component of development projects is imperative to achieving a development agenda (PATH, 2014). The project housed a strong research agenda. Challenges experienced implementing the research agenda included:

- attracting a post-doctoral fellow who would drive the research projects as outlined in the project proposal;
- local capacity constraints for driving research; and
- identifying and recruiting local students to be beneficiaries of the project’s scholarships;

Five research scholarships were awarded from Irish Aid through the project for PhD or Masters studies at DIT. While these scholarships were intended as capacity

development of Mozambicans researchers as part of the Irish Aid higher education and research development agenda, there were several challenges recruiting Mozambique nationals. Therefore, in order to fulfil the requirements of the grant, these scholarships were awarded to non-Mozambicans, with each research topic having relevance to the MEP or future of optometry in Mozambique.

It was reported that the postgraduate research ideas were not static and changed with the project, which was noted by researchers as limiting progress.

“Every development project should change and evolve. But it’s difficult with research. You cannot change everything every time you write or you will never have anything written.” - Key Informant 8

It was reported that multiple professional responsibilities, a lack of experience in research and a lack of clarity on how to design a research project or ‘*what I was supposed to be researching*’ (Key Informant 8) hampered individual progress. This, coupled with limited supervisory contact or constantly changing ideas about research topics, were cited as other reasons for the delay in some research outputs being met at the end of the grant.

Despite evolving research topics, aligning the research activities with the IA agenda remained a priority; together with the need to highlight local needs, and optometry’s role in addressing some of the developmental challenges faced by Mozambique. The research, therefore, still achieved its intended purpose toward the development

of optometry in Mozambique, which is an ongoing process and data generated served to inform advocacy efforts and areas of work in Mozambique.

Some of the longer term benefits of a research agenda within development projects, as evidenced through the MEP experience, were noted as:

- strengthened partner organisations' and researcher profiles; and
- the potential to generate more funding for other developmental projects.

Given that Universidade Lúrio was still a developing institution, there was limited expertise in the area of research and therefore no established research structures and processes for primary research requirements such as ethics review, which were often unclear or bureaucratic. Understandably therefore, it was reported that Universidade Lúrio's involvement in the planned research activities was only moderate (Ilal & Kleibl, 2014).

All five scholarships were awarded to non-Mozambicans after failed attempts at securing qualified or interested locals as part of local capacity development. While this may have been seen as a limitation, the MEP was committed to meeting funder research outputs aligned with Irish Aid priorities and was eventually commended for the cross-cutting research conducted in the project which created important new knowledge in relation to the North-South collaborations, the scale of the blindness prevention problem, as well as the economic and societal benefit of the interventions through its education programme (Ilal & Kleibl, 2014). Furthermore, the outputs of

the research will support Universidade Lúrio's efforts to take the programme forward.

While partners agreed that a situational analysis should have been conducted prior to the project's implementation, in the case of the MEP, it was not possible within the life cycle of the project, which anecdotal evidence suggests is a common limitation within donor funded projects.

"In an ideal world research should take place before the [development] project, but that's not feasible. You can't wait for the outcomes of research first. You have to weigh up the priorities against the need." – Key Informant 8

The concept of attaching project-based research to postgraduate degrees received mixed responses. Some KIs reported that it was beneficial in that a scholarship serves to anchor people to the project who may otherwise leave early for personal or professional reasons. Conversely, it was also noted as a limiting factor which potentially delays research outputs given student academic administration requirements or competing work/life commitments which may slow down the progress of the research write-up. This also limits the capacity of the programme to develop and implement new research ideas that may emerge as students need to deliver on their initial research plan submitted to the university.

Regarding the matter of part-time researchers, it was reported that multiple professional responsibilities, a lack of experience in research and changing ideas

about what should be researched, hampered progress. Furthermore it was reported that the operational challenges in delivering on this research mandate e.g. no vehicle to get to fieldwork sites, stipends for fieldworkers or equipment budgets, was extremely limiting.

Expectations for the involvement of UL staff in research activities were reportedly unrealistic, since UL staff had many competing priorities including work overload, challenges around the setting up of a new university, teaching responsibilities and settlement challenges of moving to a new city, since many had relocated to Nampula from other parts of the country.

“The budget should have allowed for setting up a research division; or funds to pay teachers while qualified people did research” - Key Informant 8

Some KIs reported that a means analysis of the capacity at Universidade Lúrio to conduct research should have been conducted, which would better have informed the resource allocation and capacity strengthening at Universidade Lúrio in terms of driving the research agenda, such as the establishment of a research office with administrative assistance, computers, etc. to help support research efforts, suggesting that there was need to restructure the budget on the basis of this. There was a reported mismatch between what was needed (supporting research infrastructure development) versus what was expected i.e. local research outputs, since the latter could not be effectively realised without the former being in place.

The value of research as a fundamental component of development projects cannot be underestimated. Therefore, the MEP supported the execution of a number of key policy relevant and development research activities in Mozambique.

5.7.4 Project Staffing

The efficiency of the MEP was affected by a number of factors including human resources management. There were few project personnel on the ground in the earlier stages of the project, resulting in reported management weaknesses in the project during this phase. While shorter term contractual commitments from faculty served as stop-gap measure, concerns were raised around continuity and the quality of impact when faculty only served the project for one year or less, which was a concern in the earlier part of the project.

5.7.5 Capacity Development

KIs reported that there was deliberate intent towards capacity development in the MEP through the following activities:

- collaborative research;
- Ireland- Mozambique student exchange programme; and
- local faculty development.

Sending students to be trained in Brazil was in keeping with the project's goals to ensure the training of national staff for optometry course coordination and the management of MEP interventions. However, the risk of their not returning was also noted.

5.7.6 Language

The language divide was noted as affecting several aspects of the project's roll-out, notably the North-South student exchange programme. The MEP embarked on an exchange programme where students from DIT visited Nampula annually, and engaged in screening activities within the community. However, this exchange programme was not reciprocated.

“We cannot even encourage networking among students in partner institutions as Mozambique students’ English is very poor” – Key Informant 8

Apart from the possible cost limitations of sending students from Mozambique to Ireland, the language barrier was cited as one of the possible reasons for the absence of a reciprocal South-North exchange.

Beginning a professional training programme without the necessary resources places a burden on project implementers and may compromise the quality of the training. Regarding the establishment of Vision Centres as part of the longer term strategy for optometry development in Mozambique, while there was an agreement between the

Ministry of Health and the MEP, there was a general lack of detail around how this component would be financed and managed following the end of the project term.

5.8 Discussion

The finding that development projects may sometimes commence out of funding opportunity rather than pre-existing country level plans is significant, since funding opportunities can act as drivers of strategic interventions without organisations necessarily having a prior plan for that specific intervention.

However, many development organisations rely heavily on external funding for survival; therefore the opportunistic nature of development grant calls may sometimes lead to the pursuit of non-strategic projects as organisational insecurity, competitive pressures, and fiscal uncertainty promote competition amongst development actors (Cooley & Ron, 2002). An additional risk is the creation of temporary organisations for project-based work (DeFillippi & Arthur, 2002). Funding agencies would therefore do well to evaluate the strategy and track record of development organisations, as well as appropriateness of proposed interventions, and be alert to the opportunistic element development funding creates, particularly within the NGO space.

Development projects may originate at any point. An opportunity may present itself for an intervention requiring a specific strategy; or a strategy may exist and a partnership opportunity sought to implement it. Partnerships may be formed,

funding sought and the development project launched, though not necessarily in this order. This is represented by the Development Matrix (Fig 15).

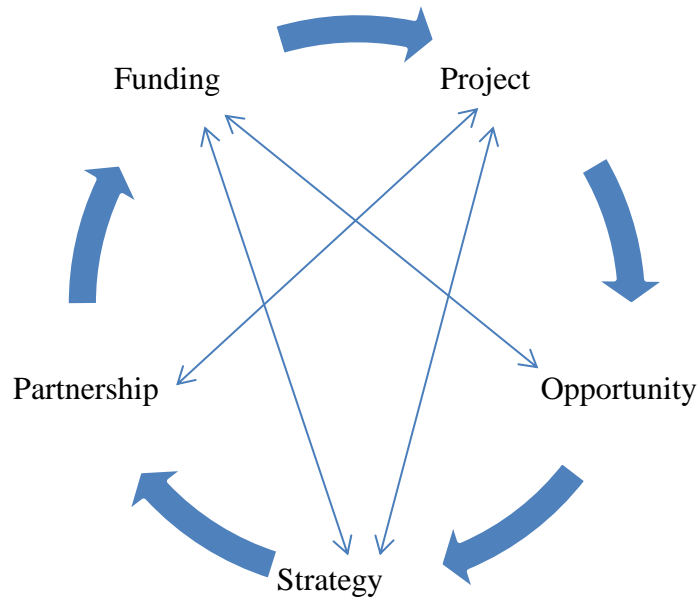


Fig 15: The Development Project Matrix

As was the case with the Irish Aid funding in this project, following the initial intervention, new opportunities may emerge or inform revision of strategy, with the loop continuing. Strategic allocations on the part of funding agencies may lead to secondary development opportunities, which would ultimately make the initial funding more impactful, as was the case with Irish Aid and the MEP.

The MEP represented a development project successfully nested within a primary research grant. This confirms the finding that NGOs are often catalysts for innovation, perfectly positioning NGO's as initiators of development activities (Lewis & Kanji, 2009). Funding organisations by nature are not prescriptive, but choose to collaborate with organisations that match their objectives and strategies

within poverty alleviation (Busiinge, 2010). Therefore creative thinking on the part of development organisations around research and project opportunities that align with funder objectives and strategies will likely lead to successful funding awards for strategic projects. Stakeholders in the development sector may also find opportunity to expand their strategic projects to other areas by keeping a keen watch on new funding or partnership opportunities for mutual benefit. As in the case of the MEP, development organisations need also not be restricted by the parameters of funding calls but can find creative ways of achieving service development agendas through research funding calls. However in such contexts, the risk of under preparedness of partners, as indicated earlier, needs to be mitigated. Furthermore, avoidance of prescribed solutions, as is a participatory approach to defining the development solution with local stakeholders, is advised.

Situational analysis is an analysis of factors in the planned project context to assess their potential impact on the project (Richards, 2001). The finding that a thorough situational analysis had not been conducted prior to the design and implementation of the MEP supports the reasons for the failure of the MEEM structure. While a situational analysis on prevalence of URE and HR capacity in Mozambique had been conducted, this did not encompass all of the complexities that the project presented, which included legislative and policy frameworks and the policy implications thereof, as well as the willingness and capacity of partners to adopt the proposed approach. Therefore the true need and context had not been fully defined prior to implementation of the MEP.

According to Fox and Van Rooyen (2004) strategies to promote rural development should be based on appropriate information. Having a full understanding of the local context and stakeholder needs and perceptions is therefore critical to the successful implementation of proposed training models. This is confirmed by research which states that gathering information to develop a sound, realistic programme is the first task required in the development process (Walters, 1982), in keeping with findings by Machado (2014). Understanding the project context is also important to designing appropriate solutions for a developing country since, as previously cited (Richards, 2001, Walters, 1982), the contexts for education programmes are diverse and the particular variables which come into play are often the key determinants of the success of the programme. In the case of the MEP a key determinant was the legislative framework which did not support the planned programme structure.

The Malawi School of Optometry experience demonstrated that there are inherent structural problems in the two-tiered model. Research showed that all of the students in the two year diploma programme had aspirations to upscale their qualifications to degree level at a later stage and were merely using the diploma programme as an entry into the bachelor of optometry programme (Moodley, 2015).

The experiences in the Malawi programme further demonstrated that:

- I. Not all of the diploma graduates would meet the academic requirements necessary for entry or success in the degree programme, based on differing entrance criteria at the two levels;

- II. Direct entry into the degree programme would not be automatically possible and would require a bridging programme to prepare graduates for further study to a full optometrist which would place an added resource burden on the programme.
- III. A cadre of personnel were being developed who would likely be dissatisfied practicing at technician level for reasons of salary, rank and limited career path options. This presents a potential risk of technicians being lost to other programmes if repeated attempts at entry into the degree programme were unsuccessful;
- IV. The institution only allocated 2-3 spaces for diploma graduates into the degree programme, meaning that the majority may spend years trying to get into the degree programme, becoming disgruntled and never realising their career aspirations.

Therefore, legislative restrictions aside, indications are that the MEEM as a developing world model of training optometry is impractical and will not achieve its intended results. This is supported by anecdotal evidence that none of the other School of Optometry projects implemented in Africa subsequent to the MEP followed the MEEM structure. From a theoretical perspective though, shorter training programmes have the advantage of producing cadres quickly, and addressing an immediate need in a developing world context; as well as in the case of the MEEM structure, confining mid-level personnel to work opportunities within the public health system where the need is greatest. However, mobility of graduates from new training programmes seems to be a desired developmental outcome in Mozambique and a restrictive model of this nature is in conflict with the local

stakeholders' development ambitions. This finding is possible, since many of the senior Mozambican officials lived and worked in other parts of the world during the civil war and, by their own experience, may feel that other aspiring young graduates should not be withheld from migrating to other countries should their personal situations demand it. These factors once again highlight the importance of thorough consultation when planning for professional programmes within a developing country so that models of training are embraced locally.

The finding that adequate high level engagement with government agencies did not take place is important, since research into development practices within OECD countries has shown that for projects to mobilise maximum resources and achieve substantial impact, partnerships between the state and aid agencies or private sector organisations is essential (Osborne, 2002). The mixed results regarding levels of consultation and collaboration on issues of curriculum and programme design is also an interesting finding. The dichotomy between external partners reporting that local partners had been consulted on matters of the education model and curriculum, and local partners reporting the contrary, possibly points to the fine line between consultation and consent.

Vermeulen and Cotula noted that while consultation offers a voice for affected people within the development process, it does not confer any authority to veto or shape the terms of the investment, falling short of consent (Vermeulen & Cotula, 2010). These 'consultation' processes are therefore often unsatisfactory, particularly in light of the power relations between the North-South development partners and funding agencies (Girvan, 2007). Research has also shown that there is

the risk that potential beneficiaries may withhold key information, as in the case of the viability of the MEEM within the Mozambican context, for fear of losing the funding (Busiinge, 2010).

Implementing a Portuguese language optometry training programme also proved challenging. While Mozambique's constitution stipulates that education must be delivered in Portuguese, it does not expressly forbid teaching in English. Therefore, with the demand for competency in English continuing to grow, senior officials in Mozambique are exploiting this legislative loophole to increase the use of English as a medium of instruction in Mozambique as part of their development ambitions. In the case of the MEP, language aspirations were not expressly considered and it was merely assumed that a Portuguese language programme would be required for the long term, supported by significant Portuguese language materials development for the optometry programme. While necessary given the weak English competency that existed in Mozambique at the time of implementation, it seems likely that this linguistic programme will move towards a dual medium programme in the future as governments increasingly recognise the importance of English to their economies and societies, and individuals see English as a tool that can help them to fulfil their personal development aspirations (Coleman, 2011).

The indication that English is becoming a preferred language for higher education and training in Mozambique is a trend that has been noted in several developing countries particularly across Africa and Asia (Coleman, 2011). However, starting a programme in a country's first language is both necessary and practical, particularly

given the low levels of English usage in Mozambique at the inception of the MEP. This is in keeping with literature which states that while a global language such as English is a useful tool for development, and that community development programmes cannot be successfully implemented unless they are presented in a language that people understand well (Moore, 2005) as language is a key element in the learning process (Pithers & Lim, 1997).

Research has shown that terminology and colloquial terms used by teachers are some of the major learning difficulties faced by learners. Cultural differences can also mean differences in perception and meaning, making learning a difficult and confusing process. The linguistic competence of lecturers to effectively deliver subject content through medium of a second language has therefore raised concerns in other projects (Barnard, 2014). This is an important point for consideration, where in the MEP; predominantly Spanish teachers from Europe and Latin America were, out of necessity, recruited to teach Portuguese-language students in Africa, compounding the language and cultural learning challenges. While there are similarities between the Spanish and Portuguese languages, the cross-regional cultures and social communication practices are vastly different. Mutual adjustment and the ability of the students to understand instruction in such learning environments has been called into question (Barnard, 2014). This is an important consideration for development programmes being implemented in non-English countries, where faculty from within the linguistic and geographical region may be scarce.

Coleman confirmed that the English language has been given a key role in development for purposes of employability, international mobility and as a key for unlocking further development opportunities (Coleman, 2011). This supports these

research findings, and the fact that there was resistance to training graduates to a lower level than would be recognised internationally. Recognition of graduate training is also an important consideration for mobility of graduates in a globalised world where, even in the case of Mozambique, newly graduated professionals are seeking employment opportunities or further training elsewhere in the world. This once again highlights the importance of taking the time to understand the local development aspirations as part of the pre-planning phase of a project before any training solutions are designed, so that development investments of this nature are accepted as a plausible, sustainable solution to meeting the needs of all stakeholders. It does however leave unanswered the question of how to balance the personal aspirations of individuals for international professional mobility, versus the local developmental needs; a challenge poor countries such as Mozambique must address when planning for new programmes.

If leaders in Mozambique see the development of English as a medium of instruction in higher education as part of their developmental agenda, the concept of a true Portuguese-language School of Optometry may be short-lived. Identifying the language aspirations of development partners early on can inform a medium to long term plan towards dual medium programme delivery. Development projects must therefore respond to diverse and multifaceted needs in the country of implementation, including its linguistic developmental ambitions. While countries may aspire to increased English language usage, in reality, immediately implementing English language training programme in a country with poor English proficiency is impractical. However, had this aspiration come to the fore in the planning phase of the MEP, it may have fostered a more comprehensive

‘development’ approach for the longer term and perhaps eased some of the faculty recruitment challenges experienced by the project in its earlier years. This process in itself is not without challenges.

Research indicates that English as a medium of instruction at graduate level is a growing trend in developing countries across Asia (Barnard, 2014). While English as a medium of instruction is important in a globalised world, moving to English language instruction may create the impression that the country’s own language is an inadequate vehicle for transmission of 21st century knowledge, destroying academia in the official language (Barnard, 2014).

In the case of the MEP, perceptions regarding levels of training formed a significant part of the non-acceptance of the ‘developing-world’ MEEM. This finding suggests a strong desire within developing countries to model programmes in the developed world as these are perceived as being of a higher, internationally acceptable standard. This is also important as local perceptions that shorter duration training programmes are inferior may lead to rejection of development-based, tiered models of training which did not mirror that of the developed world, where these are designed to serve an immediate need. However, through negotiated dialogue, there needs to be a balance between what is necessary for the achievement of immediate development needs, while still being aligned to international standards.

Post-conflict countries often engage in legislative reform to bring about desired change (Samuels, 2006) and transform societies through context-sensitive visions

that are aligned to the countries needs and collective goals (United Nations Development Program, 2010). Therefore, staying abreast of legislative changes through collective partnership with governments is an important consideration, particularly when planning or establishing institutionalised undergraduate health training programmes in developing countries.

The finding that the local partners felt excluded from the curriculum design process once again highlights the importance of active engagement amongst partners around the design of country-level solutions so that the final product factors in local perceptions, to promote ownership of the project. This is in keeping with the United Nations principle of self-determination of nations which recognises cooperation in education as an important component of development (United Nations, 1981). As a principle, inclusivity in designing training solutions for beneficiary countries is of critical importance to acceptance and ownership in development projects. The external partners reporting that the institution was consulted, supports findings that there is a cooperation continuum within partnerships (Bailey & Dolan, 2011).

Local stakeholders and development partners have often underestimated the difficulties encountered when coming together to talk about proposed development solutions without adequate preparation, and have overestimated their capacity to reach meaningful consensus (Pinaud, 2007). The Dili Declaration (International Dialogue on Peacebuilding and Statebuilding, 2010) highlighted challenges between developing countries and development partners as an impediment to achieving development goals. Trust and transparency between partners is essential if development partnerships are to achieve desired results.

Resource planning for new courses should begin prior to implementation for ease of roll out of project activities. Beginning a professional training programme without the necessary resources therefore places a huge burden on project implementers, and may compromise the quality of the project's outputs, particularly in a developing world context where local institutions are often poorly resourced. Furthermore, central to addressing the primary problem of concern, which in the case of the MEP was URE, is the provision of spectacles; which while not factored into the MEP, must be central in the planning process, whether for the immediate or medium term.

An effective information and communication technologies infrastructure facilitates the acquisition and absorption of knowledge, offering developing countries an opportunity to enhance their educational systems (Mikre, 2011). Therefore, effective and regular internet connection and the use of information and communication technologies by the lecturers and students promote education development. The absence of supportive technologies in the MEP restricted a move from traditional, teacher-centred pedagogies towards more learner-centred pedagogies which support active, integrative learning (Mikre, 2011) and would have relieved faculty of work overload. Improved information and communication technologies infrastructure would also have likely increased the efficiency of the project as highlighted by Ilal and Kleibl.

Defining an exit strategy for expatriate lecturers is also important for the sustainability of development training programmes. Therefore, considerations need to be made well in advance of project implementation as to longer term faculty requirements for eye health training programmes in developing countries.

The findings in this research are supported by previous research which found that developing a partnership characterised by a free and equal exchange of ideas and decision-making is challenging because of language diversity, geographical constraints and differences in terms of how the partnership is conceptualised and interpreted (Bailey & Dolan, 2011). A lack of trust and experience, asymmetries of interest or the predominance of organised interests can also make discussions a screen for self-interest (Pinaud, 2007). Project partners should, therefore, be aware of these dynamics and potential pitfalls when engaging in collaborative planning and should take collective responsibility for all engagement required in programmes of this nature.

In other parts of the world, optometry has moved towards a five year training programme to include ocular therapeutics training up to Level 4 of the World Council of Optometry Global Competency Model. In a globalised society, particularly when training programmes are driven by a development agenda, solutions should be designed taking into account global developments within the profession. This is confirmed by previous research that demand-driven design is a key factor for success in training programmes for the developing world (Honorati & McArdle, 2013).

This acknowledgement was made during the implementation of the MEP, and there are currently discussions to upscale the optometry training programme to five years. However, development solutions that mirror training programmes in the developed world also carry the risk of emigration, where graduates from developing countries may seek better opportunities elsewhere in the developed world. This could compromise the underlying development ambitions and human resource

development strategies of such projects. Therefore, broader societal needs must also be considered in light of individual needs.

“Any perspective powerful enough to reveal something of importance also conceals something of importance. Too often, in the attempt to privilege one perspective over the others and call it the final truth we forget that differing perspectives need not be mutually exclusive and can possibly illuminate deeper and more complex truths” (Brown, 2014). Therefore, there needs to be a balance between need and consistency, without purposefully restricting the professional mobility of individuals.

Another important point for consideration is that developed world models have not solved the eye care challenges in other developing countries such as South Africa, where there are sufficient optometrists to meet the eye care needs of the population, yet almost 80% of the population still do not have access to eye care services. This is because optometry has largely been a private sector profession until only recently, with most practitioners based in urban areas inaccessible to a significant portion of the population (Naidoo, et al., 2003). Designing unique local solutions therefore forms part of the development agenda, and not merely duplicating developed world models.

Regional models of training are sometimes justified on the basis of cultural and linguistic ties between populations. However, without proper consultation and planning, the true value of such models cannot be realised. Involving all potential stakeholders from the very beginning in the design of a programme which they felt would be more appropriate to their local needs would have saved the project the

wasted time and effort trying to implement the MEEM. This would have further allowed the MEP to accomplish more with the resources it had within its disposal in the term of the project.

Development funding support is typically limited in its scope and duration. However, the development of university level programmes must be seen as a long term investment for the full goals of the project to be realised before handover to local partners. This brings to the fore an imbalance between funding cycles and project cycles, which should ideally be synchronised so that project goals can realistically be achieved within the funding cycle if long term development objectives are to be met. While most development grants tend to be short term in duration, funders should evaluate the nature of the project against expected outputs and factor in time for country-level or regional analyses where appropriate, especially when supporting the establishment of higher education programmes. In the case of the case of the MEP, the initial five year term saw the launch of the training programme and student recruitment begin earlier than was ideal, without a thorough situational analysis being conducted, which contributed to the failure of the MEEM. However, MEP partners addressed this limitation with Irish Aid, who supported a no-cost extension.

The finding that most interview respondents could not describe or explain financial protocols within the project or specific financial responsibilities of parties was concerning, and would suggest a need for more collaborative planning as well as a detailed outline of finance management protocols, and individual partner contributions to the project's activities. A stable funding structure has been

considered an absolute prerequisite to the successful operations of partnerships (OECD, 2006). The finding that partner responsibilities around the funding of certain components of the project were not clearly outlined is also concerning, since the absence of a defined funding model could potentially compromise the achievement of project outcomes if partners were not able to fulfil certain obligations.

The lack of an equipped institutional training centre at Universidade Lúrio also reportedly delayed student clinical training. Furthermore, the absence of supportive technologies in the MEP retarded a move from traditional, teacher-centred pedagogies towards more learner-centred pedagogies which support active, integrative learning in a constrained teaching and learning environment (Mikre, 2011). Effective information and communication technologies infrastructure has been known to facilitate the acquisition and absorption of knowledge and offers developing countries an opportunity to enhance their educational systems (Mikre, 2011). Therefore, a regular internet connection and the availability of information and communication technologies services for use by both lecturers and students, which is usually the responsibility of the tertiary institution, would likely have promoted the development of the optometry education programme at Universidade Lúrio. An assessment of the university context and resource availability is therefore an important consideration in planning for such programmes.

This highlights the need for flexibility within projects of this nature, since development work is dynamic; therefore all partners must be responsive to unexpected dynamics. Funders should also be open to longer term funding

strategies in order to see improved implementation of planned and evolving objectives within development projects, and maximum return of investment particularly within professional healthcare training projects.

The value of research as a fundamental component of development projects cannot be underestimated as the MEP has supported the execution of a number of policy relevant and pro-poor research activities. Collaborative research serves to build capacity in under-resourced environments. While the Irish Aid grant championed research, appropriate resources to drive this objective were lacking.

Recommendations for research-led grant funding that emerged out of the interviews included:

- A means analysis should be conducted;
- There should be flexibility in how the funds are utilised; and
- Funders should consider assigning development specialists, strategy, project management or policy development professionals as advisors to first time grant beneficiaries to help steer the project through inevitable implementation challenges.

5.9 Conclusion

While developmental solutions may have theoretical merit, partners need to engage in intensive consultation with all stakeholders before finalising and presenting a training solution for implementation. The in-country dynamics and perceptions amongst different local stakeholders needs to be taken into account, and targeted

advocacy with relevant ‘ill-informed’ centres of power who may have skewed perceptions resulting from third party influence, needs to be undertaken to create a uniform understanding of the rationale and benefits that a particular training solution may hold. Furthermore, reliance on a single key government representative as a centre of power in the negotiating process is unreliable.

Development aid provides the opportunity for organisations and countries to drive mutually beneficial strategic agendas. However, there is intense resistance to technical solutions designed by experts in the developed world with little consultative input from locals, particularly if these are not in keeping with models in the developed world. Theoretically designed development models of training may therefore become impractical, contextually inappropriate solutions to real development needs and waste valuable project time and development funding, diluting the effectivity and impact of development aid.

Planning therefore forms a critical component of successful project implementation and management. Identification of potential challenges in the planning phase allows for early mitigation of risk. Careful project planning in advance of implementation is the best available means to ensure efficient, economic use of development funds and to increase the chances of implementation success. However, even in the absence of thorough planning, development objectives may still be realised, even if not in the form originally intended, or within the timeframes and budget proposed. Partners must however remain true to the objective of designing mutually accepted, needs-driven training solutions.

Finally, there is an ethical consideration to be made when designing theoretical training models that stunt prospective student expectations for career pathing as evidenced by the Malawi programme which followed the two-tiered model, with challenges integrating the 2 levels. However, creating access to health care services and reducing the burden of disease are competing ethical responsibilities held by governments in developing countries, demanding a balance between needs and wants when designing development projects. Therefore, with the participation of the local partner and expert input from technical partners, a mutually accepted training strategy can be designed that presents a win-win situation for all.

CHAPTER 6:

ESTABLISHING A NEW PROFESSION

6.1 Introduction

Delivering change is considered a challenging, complex process which involves managing risk, scope, stakeholder relations and other project issues that may arise (Bourne, 2010).

The vision of the WHO is a world in which nobody is needlessly vision impaired and where there is universal access to comprehensive eye health services. WHA resolution 66 therefore encourages the development and implementation of integrated national eye health policies, plans and programmes which enhance eye health and strengthen health systems (World Health Assembly, 2013).

In 2009, the MEP was established as a regional School of Optometry for Lusophone Africa. Its principal objective was to produce optometric professionals who could address the eye health needs of an unserved region where optometry as a profession had not previously existed. Addressing a longer term human resources development need, the MEP ventured in relatively new territory in response to a growing health systems strengthening approach, where eye health projects had historically tended more toward service delivery approaches (Blanchet & Patel, 2012). The involvement of development organisations in the establishment of institutionalised professional training programmes was therefore an emerging concept.

One of the most difficult problems confronting project administrators in developing countries is the challenge of implementation. Much of this has been traced back to

poor project preparation, where project personnel often underestimate the time and effort required to plan for projects on which development investment and outcomes depend, resulting in hastily planned projects (Gittinger, 1984). Gittinger noted that good development projects require sound planning, just as sound plans require good projects. However, project preparation is not the only important aspect in development planning. Most developing countries have national plans intended to drive growth and achieve a range of objectives. Identifying these and positioning efforts within local frameworks is therefore central to efficient project planning and implementation for sustainable outcomes.

6.2 Methods

Primary research methods as described in detail chapter 4 were followed, with the focus of this component of the thematic analysis being around factors directly attributable to the development of the new profession of optometry in Mozambique.

6.3 Results

The development of the new profession of optometry in Mozambique presented a few challenges, herein discussed in more detail. Themes and sub-themes are summarised in the following table (Table 16):

Table 16: Themes and subthemes (implementation)

Chapter	Theme No.	Theme	Sub-themes
6 ESTABLISHING A NEW PROFESSION	5	Establishment of the Profession's Identity	Project vs. Programme Political Support Public Relations and Branding Strategic Alliances
	6	Challenges implementing the project	Frame of Reference External Influences Regulation, Integration and Sustainability Graduate Placement Professional Development Structures

6.3.1 Project Identity vs. Professional Identity

Two key interrelated “Identity” themes emerged during interviews. These included “Project Identity” and “Professional Identity”, which each included several key components as outlined in Fig 16.



Fig. 16: Factors influencing project identity and professional identify within higher education development projects

PROJECT IDENTITY

A surprising finding in the research was the reported reservations on the part of some local representatives to the proposed new MEP training initiative. Local officials admitted an initial mistrust towards this “ambitious” new training idea as a result of prior institutional experience.

Early in 2008, following initial talks amongst MEP partners, a mass screening ‘Campaign for Quality Vision’ was initiated by UL to introduce the concept of optometry services to Mozambique. This was a hugely successful campaign which

saw more than 3000 people being screened, and had the former first lady of Mozambique, Graça Machel, open the event (Figure 17).



Fig 17: Partner representatives at the launch ‘Campaign for Quality Vision’

“One of the main things that propelled the decision to start the optometry course was the experience from the first Campaign for Vision Screening. Graca Machel was in attendance. There was the idea to bring optometrists from all over the world together and expose trainees to the activities they would be involved in. This made the university to take this decision to start programme [sic]. - Key Informant 2

The success of this screening campaign created positive sentiment, which ignited local support and enthusiasm towards the MEP and the proposed optometry training. Factors identified as having a positive influence on the project's identity and acceptance included political support, having a brand strategy, as well as local and international networking.

a. Political Support

The MEP engaged senior politicians such as the Head of State, consular officials and the First Lady in strategic activities relating to the project which included institutional visits, official trips to Ireland and the MEPs first graduation ceremony. Sensitising government officials to the local needs and project's rationale reportedly supported local acceptance of the project, and demonstrating value to and through these senior officials also promoted public support for the MEP. However, while there was some engagement with high level government officials in the initial stages of the project, research results further suggested that there lacked a targeted, consistent collaborative approach to engaging government on more strategic issues relating to the project. Much of the earnest engagement from the MEP, particularly in relation to official recognition of the new profession of optometry by relevant structures only began much later in the project when major roadblocks such as resistance to optometry by certain key individuals was identified. Concerted advocacy efforts, however, eventually saw the integration of optometrists into the broader health system, as senior government officials were able to give directives in support of the MEP, albeit through time consuming, bureaucratic structures.

b. Public relations and branding

The MEP embarked on a strategic public relations campaign and in the process, built a strong brand as evidenced by their global support on social media platforms such as Twitter and Facebook. Publicity activities included a professionally designed and regularly updated website, production and dissemination of mini-documentaries, regular social media updates, as well as strong representation at key professional and research conferences globally. Through these activities the MEP established a recognisable brand within the global eye care community, which proved extremely valuable in attracting suitably qualified faculty to the project and accessing additional funding to support the longer term sustainability of the programme. Ilal and Kleibl (2014) also commended the strong media presence and the project's attention in Ireland and the MEP's use of social media. However, it noted that the effectiveness of the MEP strategy for public awareness in the South, specifically in Mozambique, was only moderate.

c. Strategic Alliances

The Mozambique Eye Care Coalition was a coalition of development organisations involved in eye health projects in Mozambique, of which the MEP became a member. Its purpose was to engage in collective advocacy with the Mozambican government for a comprehensive, co-ordinated eye health strategy across the country in support of the National Plan for Eye Health (Ministerio Da Saude, 2007).

Results from interviews and reports indicated that the Mozambique Eye Care Coalition was a valuable advocacy network and strategic platform through which

project partners could drive support for the MEP's activities in general, and specifically, recognition of optometry as a profession within the health system. Ilal and Kleibl (2014) also commended the MEP's partnership with local non-governmental organisations as a positive step towards attainment of the project's goals. It further highlighted that collaboration and cooperation with local and international NGOs and advocacy organisations such as the World- and African Councils of Optometry, as well as the IAPB, serve to promote synergies on the ground and create opportunities for sharing knowledge and experiences.

PROFESSIONAL IDENTITY

Optometry as a profession had not existed in Mozambique prior to the MEP and there was therefore a poor frame of reference to the profession initially and a lack of perspective as to how optometry might integrate with the other health professions in Mozambique to constitute an eye health team.

a. Introducing a new profession: Frame of Reference

Interviews with some local key KIs revealed initial elements of scepticism toward the “outside” countries’ interest in Mozambique, particularly since optometry had not previously been identified as a need in that country. However, both anecdotal evidence and research demonstrated that there was generally a poor frame of reference to what optometry was. One official reported having been “*exposed to it*” in Brazil and associated their positive response to the MEP proposal with their observation of optometrists “*doing a nice job in communities*” [Key Informant 2] in

that country. Conversely, there was a strong frame of reference to the profession of ophthalmology which had a longstanding presence in Mozambique.

Mozambican officials however reported that the usefulness of the optometry course was only later acknowledged, particularly due to the unaddressed need for eye care in the northern provinces of Mozambique as highlighted by the MEP, since most of the ophthalmological care being delivered in the country was concentrated in and around the capital city of Maputo in the south (Fig. 18).

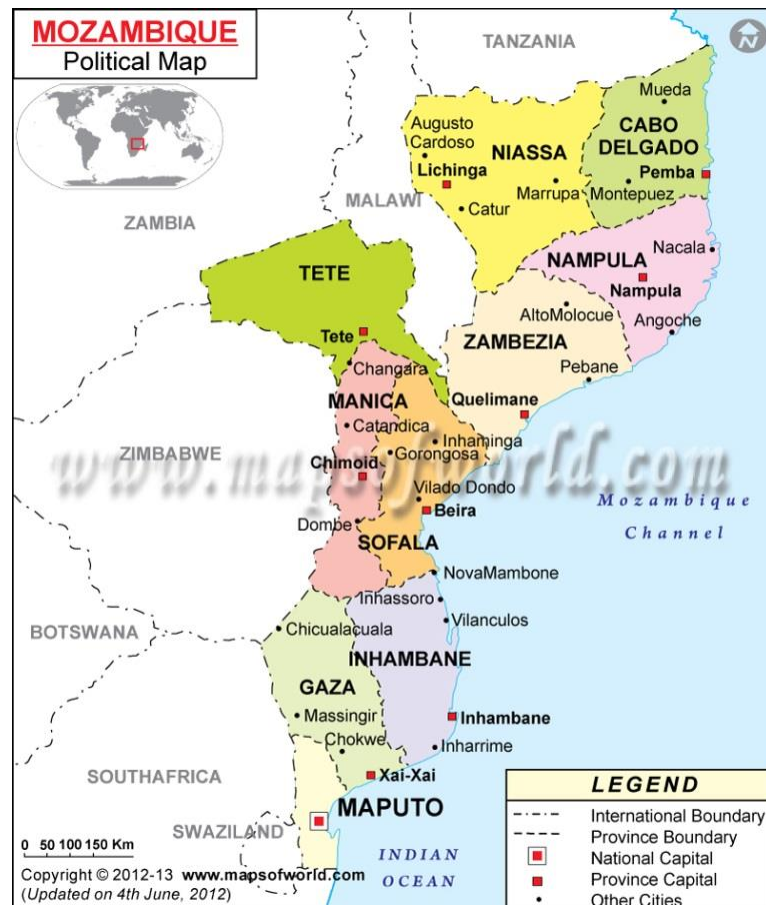


Fig. 18: Map showing capital city and provinces of Mozambique¹

¹<http://www.mapsofworld.com/mozambique/mozambique-political-map.html>

There was strong evidence of an initial resistance in ophthalmological circles in Mozambique to the training of optometrists. The misunderstanding of the skills level and scope of practice of optometrists as compared to ophthalmologists was reportedly perceived as professional infringement; and was cited as the main reason for this resistance. However, Universidade Lúrio officials understood the difference in scope between the professions of optometry and ophthalmology and expressed that optometrists and ophthalmologists could work together to help address the eye care needs in Mozambique. They further expressed confidence that the MEP would make a significant impact not only in the northern region of Mozambique, but in the entire country in meeting the eye health needs of Mozambicans.

c. External influences

Regional alliances were noted as having an influence on various aspects relating to the project's implementation. Interview results revealed that senior officials in Mozambique retained strong links with Brazil which had a shared history of colonisation by Portugal in the early 16th century. Local KIs reported that this association influenced perceptions around optometry and its initial acceptance in Mozambique, particularly since similar professional rivalry between ophthalmology and optometry was still very strong in countries such as Brazil.

“We are importing a problem from a different culture, with a different perspective.” - Key Informant 2

Furthermore, despite the technical expertise from MEP partners at BHVI and DIT into the curriculum design, further input was independently sought by local officials from allies such as Brazil, Portugal and Spain. The models of training in these countries ultimately influenced the final curriculum for the MEP, though this remained in keeping with the desired level of training and exit competencies planned for the MEP and aligned with the World Council of Optometry's Competency-Based Model (World Council of Optometry, 2005).

6.3.2 Professional Integration and sustainability

Several participants cited the risk of graduates not being placed within the Ministry of Health as one of the biggest threats to the project achieving its public health objectives.

6.3.2.1 Graduate placement

The graduate placement strategy for the MEP was that optometrists would be employed within the public health sector and deployed to geographical areas of need. Inherent in this was that posts should have been available for optometrists to be employed within Ministry of Health facilities in these areas, particularly in outlying districts where access to eye care is limited. Interviewees cited weaknesses in advocacy efforts on the part of the MEP partners as a contributing factor to posts not having been created within the Ministry of Health by the time of graduation for the first cohort of optometrists. This was cited by several key informants as one of

the biggest threats to the project fulfilling its objectives. However, this was achieved in the year following graduation and optometrists are now a recognised part of eye health service delivery in Mozambique. Other reported risks to the MEPs graduate placement strategy were the reported high demand for graduates and competition for recruitment with the private sector, as well as the risk of graduates leaving the country.

“While previously, graduates may have left the country to escape poverty or for political reasons, now it’s more down to globalisation... looking for new challenges.”- Key Informant 2

The MEP proposed the development of vision centres as part of the longer term strategy for optometric service delivery in Mozambique, where graduates would be placed after training. The Irish Aid evaluation team also acknowledged the risk that the new graduates may be attracted by the private sector in major cities if government facilities have not reached a state of readiness to absorb them. However, private sector optometry is underdeveloped in Mozambique, therefore this risk remained minimal. The MEP strategy required not only that the Ministry of Health create posts in the public health sector, but additionally that adequate equipment and salaries be offered in order to attract and retain the new professionals in the public health system. However, delays around the employment of optometrists within the Ministry of Health had the potential to dilute the intended impact public sector of the MEP.

6.3.2.2 Professional development structures

One of the local KIs cited the absence of a legislative framework for optometry in Mozambique as a key challenge in guiding this new profession. Some of the challenges around the placement of optometry within the health system were related to the absence of professional guidelines in-country. Promoting the establishment of an association of optometrists in Mozambique was also cited as an important and necessary milestone in the development of professional optometry in Mozambique.

While not a consideration in the term of the project, the need for continuous professional development and postgraduate training of staff was also highlighted by some as an important next step in the ongoing development of the profession of optometry in Mozambique. Additional mentoring and post-graduation programmes for the junior and senior faculties to acquire and develop the skills were reported as necessary measures that must be continued for the long term.

6.4 Discussion

The finding that there was a lack of clarity between what was the project and what was the longer-term optometry programme is not unique to the MEP. Weaver noted that these two terms have long been used interchangeably on many major projects (Weaver, 2010). This creates a lot of confusion in long term projects which are initiated by donor funds and then handed over for local ownership after a fixed period of time. Clearly delineating the donor-funded component of an initiative from the longer term, locally-driven programme is therefore important for mutual

understanding and proactive capacity development. However, there must be a link between the project's activities and overall programme.

Reports that there were negative perceptions around the need for the MEP, as well as scepticism around funder and partner interests in Mozambique, were in keeping with previous research findings which state that managing community perceptions is a key challenge facing development organisations (Cavaye, 2001). This finding may be attributed to a lack of understanding of the profession of optometry and the socio-economic consequences of vision impairment.

Research has also shown that where communities did not participate in development activities, projects lacked their full support and the subsequent limited community participation contributed to development problems and constraints (Nzau-Muteta & N'guessan, 2005). Therefore, advocacy around new programmes is essential to creating understanding and acceptance of donor initiatives, as well as fostering support for their development. To address this challenge, an initial large-scale initiative with notable publicity, intended to launch the project, may create a positive association between the proposed initiative and its potential value.

Factors noted as positively contributing to the development of an effective brand for the MEP included (Fig. 19).

- Having a marketing strategy;
- Strategic alliances;
- Local political support.

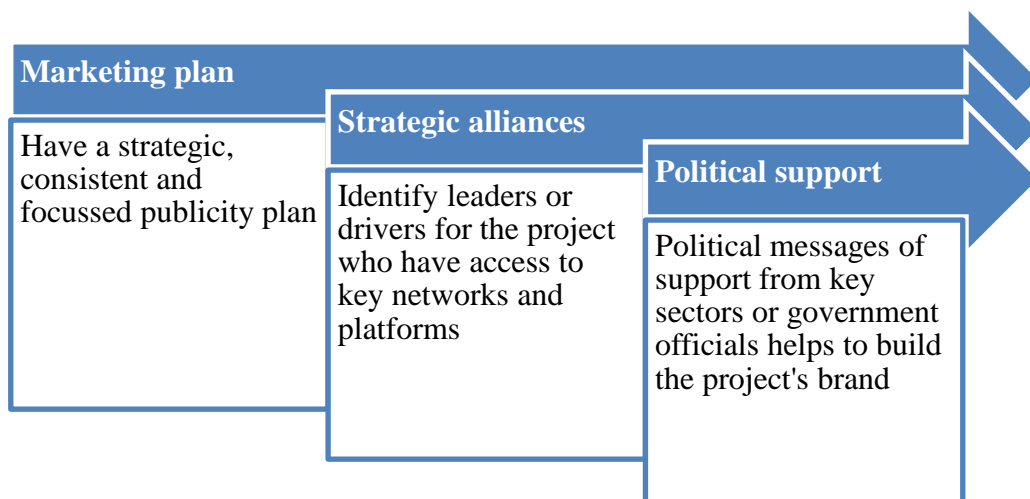


Fig. 19: Factors supporting the development of a project's brand

The MEP benefited from its strong international publicity campaign despite criticisms that these did not extend locally to the extent they may have been required. Recommendations were that public awareness tools targeting different segments of the population and institutions be developed, and that public dissemination at institutional level be strengthened so that there is improved awareness among other local eye health professionals and general health staff regarding the role and responsibilities of optometrists as part of the eye care team. Adequate public dissemination of a project's activities and outputs also serve to boost public awareness around health and education issues, as well as poverty related matters, in developing countries.

Appropriately profiling the profession of optometry proved to be an important advocacy requirement in the case of the MEP. Cooperation with the government authorities is also important, particularly when it comes to ensuring that the

graduates will be officially recognised and kept in the public health system. However, for public sector placement models to succeed, new cadres must form part of an established structure within the health system. If the structure doesn't support the model or exit competencies of the training programme, then the model will fail as it is not supported by the system (Moodley, 2015). Mainstreaming new professions demands that countries develop relevant regulatory frameworks, and proactively set standards for these new professions (Diallo & Thuillier, 2004). Development models of training must also recognise constraints to graduate deployment and be open to a parallel private sector approach which also serves broader development objectives. It is rare for refractive care practitioners to be distributed throughout a country in a way that ensures equitable access for all communities and, generally, the poorer and more rural a community is, the more limited access to refractive care will be (Fricke, et al., 2012). Previous research has shown that despite human resource development training models which select students from across the country in the hope that they return to their home cities or provinces to practice, few have the desire or incentive to do so. Various strategies are used to lure professionals to remote practice settings. These include obligatory bursar-linked placements, among others, though these are often just for a short while. Other strategies include compulsory community service and rural allowances (Maseko, et al., 2014), which are points for consideration out of this initiative. However, increasing momentum around social accountability and social responsiveness in health programmes (Littlewood, et al., 2005) is a potentially powerful mechanism to support such placements.

6.5 Conclusion

The challenge of developing new professional cadres within the context of meeting developmental objectives is complex and noted. Integrating new cadres into a health system requires intensive groundwork and advocacy even before a programme begins. A targeted marketing strategy and key alliances serve to promote a project and draw suitably qualified personnel to its employ, which have added benefits of building organisational profiles and attracting more funding to support the project's developmental objectives.

Clearly delineating the donor-funded project and its related activities from the longer term local professional development programme is necessary for clarifying partner roles and responsibilities in this development process. Furthermore, positioning the newly developed professional cadre within the local health team requires clear identification and communication of scope of practice and competencies in relation to related professions. Therefore, advocacy efforts around local professional recognition through established, respected structures must be prioritised since strategic advocacy activities have the potential to influence long term health and HR policy in a country.

Furthermore, sufficient thought should be given to the role of the private sector into the broader development agenda, which in the case of the MEP could have been achieved in the area of spectacle and lens supply.

CHAPTER 7:

PARTNERSHIP IN EYE HEALTH DEVELOPMENT PROJECTS:

FACTORS FOR CONSIDERATION

7.1 Introduction

The term ‘partnership’ enjoys popular appeal within development circles (Bailey & Dolan, 2011). It came to prominence in the 1996 Organisation for Economic Co-operation and Development (OECD) report, *‘Shaping the 21st Century: The Contribution of Development Co-operation’*, with the development partnership approach being further endorsed by the 2005 *Paris Declaration on Aid Effectiveness* and the 2008 *Accra Agenda for Action*. Partnership in the development context generally refers to a relationship between organisations which is sometimes also described as collaboration. The concept has generally been bandied as a positive attribute, though there has been a lack of clarity around principles for successful partnerships, with some arguing that there has been an overstretched application of the term in development cooperation (Bailey & Dolan, 2011).

Human resource development strategies in developing countries require comprehensive planning and significant, sustained effort supported by international reinforcement (Chen, et al., 2004) in order to achieve necessary developmental objectives. Estimates that millions of people in the world are unnecessarily vision impaired, coupled with an increase in absolute numbers of affected individuals (Bourne, et al., 2013) suggests that despite recent initiatives to address this need,

greater effort is required by stakeholders in eye health in order to eliminate this unnecessary societal burden.

The estimated upper limit for the cost of education for additional refractive care practitioners and new facilities required to correct all vision impairment due to URE globally is estimated to be between US\$ 20 045 million and US\$ 28 452 million (Fricke, et al., 2012). Even if this estimate cost was divided amongst all developing countries to address their respective human resources and infrastructure needs for refractive service delivery, this would still be vastly unaffordable for most developing country budgets, which typically have many competing priorities, in the short term.

Lessons from implementing the WHO's Action Plan for the Prevention of Avoidable Blindness and Vision Impairment 2009–2013 showed that international partnerships and alliances are instrumental in developing and strengthening effective public health responses for the prevention of unnecessary VI (World Health Assembly, 2013). This WHA report encourages governments and their partners to invest in reducing avoidable VI through cost-effective interventions. Partnerships, as a means to addressing the scale and cost of the URE problem in regions or countries of greatest need, have therefore been encouraged; and creating collaborative partnerships which invest in training has therefore also become a strategic response to the global crisis of VI (Naidoo, et al., 2010). In recent years, optometry schools have been initiated in identified areas of need through international partnerships to address the lack of training institutions and skilled personnel required to meet the global URE challenge (Minto, 2008).

Partnership as a means to achieving development objectives is, as earlier highlighted, not a new concept. Partnership, in this context, refers to separate individual organisations entering into a collaborative relationship for purposes of delivering on a specific mandate or project outcome. It has increasingly become a central component of development cooperation since the mid-1980s (Bailey & Dolan, 2011), being applied to various sectors through a variety of approaches.

Resource dependency, programmatic needs or constrained budgetary capacity in developing countries have been a central motivator in the development of partnerships which have the potential to add value by fostering innovation, leveraging new resources or promoting resource efficiency (Lowndes & Skelcher, 1998). Emphasis has however been placed on flexibility, synergy, added value or leverage in development partnerships. More recently, international partnerships have been noted as enhancing the role of African universities in achieving development objectives, particularly in the area of research and education in the field of global health (Clifford & Zaman, 2016).

The benefits that collaborative, inter-agency partnerships provide as a means of achieving public goals have been emphasised, with the idea of ‘collaborative advantage’ presenting an attractive alternative to public service-driven programmes which are often bureaucratic. The partnership relationship is generally formalised by an agreement between parties which is given concrete expression through the formation of an organisational structure where strategy is developed and decisions are made which typically have implications for the resources and actions of the individual agencies involved (Lowndes & Skelcher, 1998).

In recent years, partnerships between higher education institutes in the global North and South have been developed with the aim of improving human and infrastructural capacity in the South. However, these initiatives have often been criticised for the one way flow of capacity from the North and an absence of genuine sharing within the partnership (Bailey & Dolan, 2011).

Multi-organisational partnerships have been noted as an important means by which to manage public programmes; which may include the community, NGOs, government and / or business interests (Lowndes & Skelcher, 1998). Research in the field of development places government agencies as key components of successful development partnerships (Osborne, 2002), since inclusivity drives local ownership (Di Vinadio, et al., 2012) and ease of handover of the programme at the end of the project. However, despite the significance of international partnership as a means to addressing health-related developmental challenges, available literature on experiences, benefits and challenges within international development partnerships is limited.

North-South development partnerships have dominated the landscape of this arena, yet Bailey and Dolan (2011) question whether North-South Partnerships should remain the dominant approach for aid, development research and development co-operation. Others have criticised the ‘rhetoric of partnership’ (Crawford, 2003); questioning whether it is used as a means of legitimising external agencies interests in developing countries, or represents a form of external power imposition. Therefore, more in-depth research into development partnerships is warranted, to add to the body of literature in this very important field.

The development of higher education plays a key role in the poverty reduction agenda (Bailey & Dolan, 2011). In 2006, Irish Aid put out a grant call for its “Programme of Strategic Cooperation between Irish Aid and Higher Education and Research Institutes 2007-2011”, in which it highlighted the role of higher education and research in poverty reduction. It further identified health and education amongst its thematic priorities for funding of development projects (Irish Aid, 2006). With its focus on poverty and disadvantage largely affecting countries in the South, Mozambique, as one of the poorest countries in Southern Africa, was identified as a potential beneficiary under this initiative. The MEP was conceptualised based on the identified need for optometry training as a developmental necessity in LA. A meeting of parties representing potential partners based in Ireland, South Africa and Mozambique was convened, and a concept proposal drafted for what eventually became known as the MEP. This proposal was successfully awarded research development funding of €1.5m towards the project.

Official partners included DIT and University of Ulster in Ireland, ICEE based in South Africa and Universidade Lúrio in Mozambique. Both higher education institutes in Ireland have well-established professional training programmes and research profiles in optometry; ICEE / BHVI is a leading global public health organisation, based in South Africa, with expertise in establishing eye care programmes in the developing world; and Universidade Lúrio were the hosts and pioneers of optometry training in Lusophone Africa. Each partner brought unique contributions to the project, with dual linguistic representation of English and Portuguese in this multi-partner, multi-country, cross-institutional, development-funded partnership.

This chapter presents an analysis of the partnership experiences within the MEP, in an effort to inform best practice in this regard, on the premise that any analysis which contributes to increased understanding in the area of development partnerships will enhance future endeavours underpinned by this concept.

7.2 Methods

Primary methods as described in detail in Chapter 4 were applied, with analysis of interview data and relevant supporting documentation focused on the theme ‘partnership’, and relevant results presented herein.

7.3 Results

The following partnership themes, with their respective sub-themes, emerged from the interview results (Table 17).

Table 17: Themes and Sub-themes (partnership)

Chapter	Theme No.	Theme	Sub-themes
7. PARTNERSHIP IN EYE HEALTH DEVELOPMENT PROJECTS: Factors for Consideration	7	Factors informing the partnership	North-South Development Agenda Strategic Opportunity
	8	Partnership Operations	Structure of the relationship Roles and responsibilities Communication Stakeholders Power dynamics Capacity development

7.3.1 Factors informing the relationship

Almost all interviewees made reference to the collaborative relationship between the parties as a ‘partnership’. This research sought to understand the factors which resulted in the formation and description of this partnership.

7.3.1.1 North-South Development Agenda

The coming together of parties represented a North-South funded collaboration for the development of optometry in Mozambique, as described by interview respondents and confirmed by analysis of the funding proposal. North-South partnerships refer to developed countries, typically in the ‘North’ partnering with developing countries, typically in the ‘South’ for achievement of development objectives.

Interview results revealed that the developmental value within projects, where funding originates in the North, is not just for the beneficiaries in the South as is the historical perception of North-South development initiatives.

“Optometry in Ireland was isolated (prior to the project). The project has opened our eyes to the global diversity of optometry and educational systems for optometry in different countries. This project has opened up a completely different discipline in development optometry for us.” - Key Informant 9

This confirms the establishment of a ‘mutual learning network’ which formed part of the objectives of the IA grant.

7.3.1.2 Strategic opportunity

The Irish Aid funding call came at a time when development organisations in eye health had already embarked on a strategic change of direction from stop-gap, service-oriented activities to more sustainable capacity development projects which would address the long term structural need. Results from the interviews revealed that representatives from ICEE, on learning of this Irish Aid funding opportunity, initiated talks with representatives from DIT regarding a joint proposal for a School of Optometry in Mozambique. Almost simultaneously, engagements had begun between the ICEE representatives and senior officials from Universidade Lúrio regarding the same.

These parties, together with representatives from the University of Ulster (UU) in Northern Ireland, drafted and submitted the project proposal which was successful in its intent.

“Development funding is needed at new universities in developing countries where massification of higher education institutions is pursued in country. While the state can provide for salaries and administrative costs, equipment, infrastructure and research activity is very underfunded. External funding supports these aspects, where qualified people (expats) can be brought into the programme and donor aid provides for these additional costs.” – Key Informant 2

The identification of partners was both strategic and opportunistic. ICEE had already been pursuing an optometric developmental agenda in Africa and other parts of the world; DIT and UU represented the only institutions offering optometry in the Republic of Ireland and Northern Ireland respectively with expertise in research and optometric education, but had limited prior experience in development work; and UL was a new and expanding public university in Mozambique identifying the opportunity to host the first ever optometry training programme in Mozambique. While this coming together was both opportunistic and strategic, one of the key informants expressed that there should be a process for ‘selecting ideal partners’, and that in future, potential partners should preferably have an existing relationship before going into a joint funding application. The reason given for this opinion was the fact that there was a significant gap in understanding of the project and its

requirements on the part of Universidade Lúrio, which made partner relations very difficult initially. This would suggest a need for intensive consultation and discussion amongst parties prior to the funding approval, which was not the case in this project.

7.3.2 Partnership Operations

The initiation of the partnership was described by one respondent as ‘*evolving overnight, though there was a strategic element to it*’. Given the pace at which the project’s implementation gained momentum after funding was awarded, there was reportedly little time for detailed planning around how the relationship among and between parties would function.

“BHVI wanted to design the curriculum so [its] educational resources could fit into the design.” – Key Informant 3

This response also confirms the opportunistic element development funding creates, as earlier described.

7.3.2.1 Structure of the Relationship

Most respondents, when asked to describe the partnership, referred to it as a three way collaborative relationship between the Irish higher education and research

institutions, ICEE as the development experts in the field of eye health and UL as the host country respectively (Fig. 20).

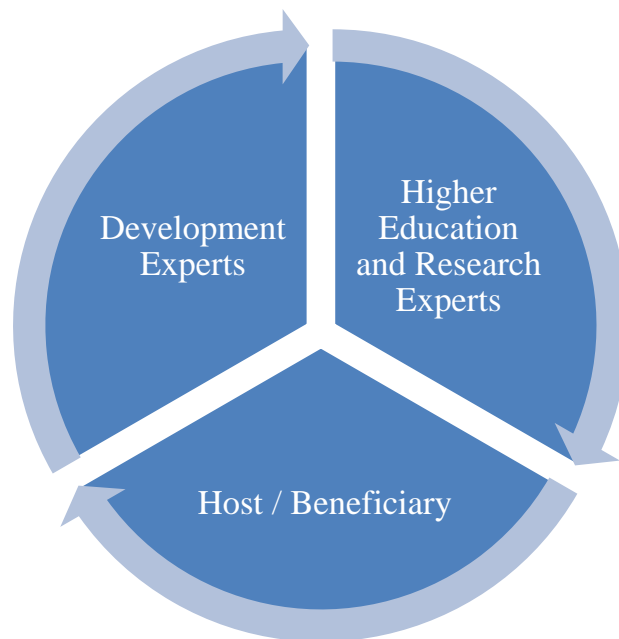


Fig 20: Tripartite partnership structure

Of note, however, was that University of Ulster from Northern Ireland, while named as an official project partner, received very little mention when discussion around partners was held, and supporting evidence from document analysis reveals that they had very little direct involvement in the project, its design and its management as compared to other parties. This was confirmed both through interview responses from UU representatives and meeting reports which made little reference to University of Ulster. Furthermore, in an addendum to the Memorandum of Understanding between partners, namely “Roles, Responsibilities and Procedures for all Stakeholders”, University of Ulster had minimal responsibilities as compared to other partners.

7.3.2.2 Roles and Responsibilities

Several interview respondents indicated that the roles and responsibilities of partners were not clearly outlined. While the official Memorandum of Understanding did outline broad roles and responsibilities, much of the detail regarding specifics relating to responsibilities was lacking. However, interviewees reported that poorly defined roles and responsibilities were later cleared through discussions with partners on expectations, and there was generally collective acceptance of responsibility for this shortcoming.

Partner roles and responsibilities were broadly articulated in the Memorandum of Understanding which remained unsigned well into the term of the project, and later outlined in a more detailed addendum to the main agreement ‘Roles, Responsibilities and Procedures for all Stakeholders’.

The main areas of cooperation as specified in Article 2 of the Memorandum of Understanding included:

- Research and capacity building in the field of eye care;
- Development of the optometry training programme at UL;
- Capacity and skills development for the profession and practice of optometry in the LA region; and
- The development of Vision Centres to support optometry training and refractive service provision.

Reasons for the delayed signing of the Memorandum of Understanding despite commencement of the project remained unclear. However, article 3 of the Memorandum of Understanding identified ICEE and DIT as the partners responsible for managing the project, which is not in keeping with a collaborative approach or local capacity development. However, given that Universidade Lúrio was a new, under-resourced university, giving too much responsibility to this partner could have been detrimental to the project's progress, which accounted for the power imbalance.

While partner responsibilities were detailed in the addendum to the Memorandum of Understanding such as Universidade Lúrio's responsibility for 'accommodation, travel and communications for postgraduate students', these costs were covered and facilitated by the project's administrators in Ireland rather than by Universidade Lúrio, suggesting budgetary or capacity constraints on the part of Universidade Lúrio. Other partner activities which were not realised such as UU's role in undergraduate teaching at Universidade Lúrio proved impractical due to scheduling challenges, individual commitments and projected cost to the project.

The recommendation by parties that Irish Aid consider funding a second phase of the programme to enable Universidade Lúrio to further develop crucial components for the intended impact of the MEP such as the development of clinics is supported by earlier results of this research that the funding cycle was out of synchrony with the project's developmental objectives.

An interesting finding in this research was also that, while the project funding originated in the North with a North-South development agenda, the technical expertise relating to the development solution for the project were led by development experts in the South, also from a developing country. This is contrary to historical North-South development relationships where the solutions were often directed or designed by partners in the North represented by developed countries. DIT as the higher education and research experts from the North did, however, play a key role in the development of the educational and research components of the project, as well as managing the overall project administration.

Of concern was the finding that none of the partner representatives were able to describe the funding model for the MEP, in any level of detail, during the interviews. DIT, as the Irish representative, was responsible for finance administration, management and reporting to Irish Aid. However, all other partner representatives were unclear as to exactly how the funds were administered or allocated to the various project components, or what the specific, additional partner financial contributions to the project would be, in addition to the Irish Aid funds. The financial management of the project was largely left to DIT. Though not intentionally, this is not in keeping with the principles which underlie partnership which include equality in decision-making and transparency (Bailey & Dolan, 2011).

7.3.2.3 Communication

Interview results revealed that the project experienced some challenges with communication.

“Having three partners, it is important to have the same level of communication, or content of information, about the project shared amongst all partners. It was clear that this wasn’t the case as there were complaints from Unilurio that reports to Irish Aid did not have any input from Unilurio and were never circulated to this partner. Three way communications was not at the level that it should have been for transparency or good partnership. This was unintentional as there was no benchmark on how to do it.”– Key Informant 5

The collaborating partners of the MEP had established an Executive Committee to steer the implementation of the programme, which was noted as being a relevant part of the project’s management. However, Ilal & Kleibl (2014) reported that the project did not keep to all relevant collaborating partner organisational structures, or regularly inform all stakeholders about the progress of the programme. There were some assertions that a developed world ‘superiority’ mind-set may have played a role in not always including Universidade Lúrio in decision making or reporting, though there was not enough evidence to support this.

It was further reported that communication between DIT and ICEE were smooth, but that there were significant delays in Universidade Lúrio responding to emails and not keeping partners informed of local developments.

“Communication must be strategic and have direction. It influences how fast people move towards something.” - Key Informant 4

This could be due to the fact that a strong top-down management culture also existed within Mozambique in general, and the institution in particular; where individuals at an operational level relied heavily on senior officials to make or endorse any decisions.

“Political will exists. The rector vision but this is not translated to the rest of senior management.” – Key Informant 10

This bureaucratic structure was noted as a threat to the project’s progress. Therefore, the partnership required flexibility, as a lack of consultation often called for changing of decisions mid-stream when pertinent information came to light.

“Initially relations were strained as the locals didn’t like being dictated to. This calls for diplomacy in managing relationships. It is important to

keep everyone in the partnership in the loop as not everyone has the same opinion about issues.”- Key Informant 10

These experiences reportedly led to issues of mistrust within the partnership as transparency and partner motives were questioned. It was further reported that adjusting to and understanding the linguistic barrier between the parties presented many challenges, including unexpected or unplanned costs.

“Partners had to find a way to communicate through translation. The fact that things must always be translated because of language proved costly.”

- Key Informant 4

One respondent expressed that the language barrier affected all aspects of the project. In particular, it reportedly discouraged networking among students within partner institutions as the Mozambican students’ English language skills were generally very poor. While these linguistic challenges were noted, overall the partnership was reportedly not significantly affected by the language barrier since most of the senior partner representatives and decision makers were competent in the use of the English language. Some however felt that all stakeholders, especially those at implementation level, should be included in the general communication structures as information often did not filter down to these timeously, affecting the pace of progress where much of the engagement around the project’s operational challenges and decisions were at management level.

“Senior officials know about the project, but at an institutional level, people don’t fully understand the partnership or project.”– Key Informant 11

With regards to the expatriate project manager, it was reported that communication with the institution was difficult as there was no established pattern or chain of command regarding ‘external’ parties communicating to or through structures at higher levels within the institution. Another challenge was that there was generally a high turnover of project staff, including project managers, faculty and Universidade Lúrio academic and administrative staff, which made it difficult for continuity. New recruits therefore required time to understand the complexities and developments within the project, particularly in the absence of a detailed handover, thereby delaying project progress.

The MEP reportedly had a system of internal and external communication which included quarterly, mid-year and annual reports. It also held annual meetings of the Executive Committee on the project’s progress. Most respondents felt that the internal information and communication flow within the partnership functioned well. Communication with the funder was reported as extremely positive. While the project suffered several changes to its original concept plan, these were supported by the Funder as appropriate and timely communication was prioritised by DIT.

The Roles and Responsibilities addendum to the Memorandum of Understanding stated that, *“Aspects common to all stakeholders must be discussed and approved by*

all”. However, this was not always the case, and in certain instances such as with the appointment of lecturers, decisions made by external parties were not favourably received by Universidade Lúrio as they felt excluded and voiced their interest in wanting to be part of the faculty selection process. Managing expectations within a partnership is therefore important to keeping an amicable partnership and avoiding assumptions.

Another issue raised was that of reporting lines, as it was not initially clear who project personnel should report to since initially DIT was perceived as the ‘research leader’ and ICEE as the ‘project implementer’; yet reporting on matters relating to research was directed to ICEE. This created confusion for some project personnel. Similarly, faculty reported confusion over the reporting lines, as they were recruited by ICEE, employed by Universidade Lúrio which paid their salaries (with an additional top-up allowance paid by the project) , yet were expected to report to ‘the project’ which included all parties. This was later clarified and a dual reporting structure to the project and to the university was developed. It was also noted that communication with Universidade Lúrio was sometimes difficult due to under resourced and overworked staff. No permanent Universidade Lúrio personnel were allocated to the optometry programme or had sufficient time to dedicate to it. Clear communication lines and protocols are therefore essential to efficient staff function and positive morale.

A practical challenge which was reported to impede communication and networking amongst partners and stakeholders was the poor information and communication technologies infrastructure and power supply reliability in Mozambique, with most

of the Mozambican students also not having basic computer skills initially or even access to email.

7.3.2.4 Early Stakeholder Identification

Research respondents identified direct stakeholders in the project as the funder, project partners (ICEE, DIT and Ulster), and the immediate project beneficiary, Universidade Lúrio. Government ministries were acknowledged by the project as having a role to play; however, it was reported by almost all interview respondents that the project failed in not initially identifying the Ministry of Health and Ministry of Education as key stakeholders in the development of this project and that the failure in actively engaging them from the onset contributed to delays in official recognition and approval of curricula and graduate placements within the Ministry of Health. While poor communication between UL and the Ministry of Health was cited as the reason for this, it should have been the responsibility of the project and not one partner to engage what was later acknowledged as critical stakeholders in this initiative.

While not explicitly stated or intentionally pursued in interview questioning, review of data revealed that the international development community was an indirect stakeholder in the project, as evidenced by the scale of publicity emanating from the project, targeted recruitment of expatriate personnel and the intentional plan to research the proposed model to inform best practice. Therefore, while not viewed as stakeholders in the traditional sense, development projects should consider its

broader audience as indirect stakeholders in the project, and identify opportunity to communicate relevant project information timeously. Demonstrating the project's successes also served as a means to garner additional support for not only this, but future projects of this nature.

“Publicity is important as it is key for project partners to be known or seen to be active; and to attract more funding. Irish people need to know what Irish money is doing.”- Key Informant 8

The project's research agenda reportedly faced significant delays in its implementation such as with ethical approval processes. Since the IA grant was primarily research focussed, research structures within Universidade Lúrio and Mozambique should have been engaged from the onset as key stakeholders. However, there were acknowledged capacity problems and a general lack of clarity on relevant structures and process requirements for research within Mozambique.

Evidence suggested that University of Ulster had no clear or significant role in the project. While there was some involvement in contributing to materials development and research supervision, they were otherwise considered an inactive partner, with the reason cited for their inclusion in the project document being a strengthening of ties between optometry institutions in Ireland.

“Institutions have strengthened their relationships [DIT and Ulster] and the project has brought students together through activities like the Eye-Tunes concert. This association could possibly be extended beyond the life of the project, funding dependant” - Key Informant 18

Therefore the University of Ulster would be more suitably considered as stakeholders rather than partners.

7.3.3 Power Dynamics

An interesting finding which emerged from the interviews, and was supported by document analysis, was the power imbalance between the external partners and the hosts or local beneficiary (Fig. 3). Much of the financial and management responsibilities lay with ICEE and DIT. In particular, matters of curriculum design, recruitment of staff and budget allocations were largely driven by these organisations. Through the interview responses and document analysis, it was evident that the local partner played more of a facilitation role in operationalising the project and being the link between external entities and local stakeholders, most notably government departments, rather than being a key decision maker. Decisions were typically made by DIT and ICEE.

One of the findings in this research was that there was a perceived top-down management approach within the project. Central to understanding this was to gain an understanding of the balance of power within the partnership and who the decision makers were. When evaluating the activities and responsibilities of

respective partners, the balance of power weighed in favour of the ‘development partners’ (Fig. 21).

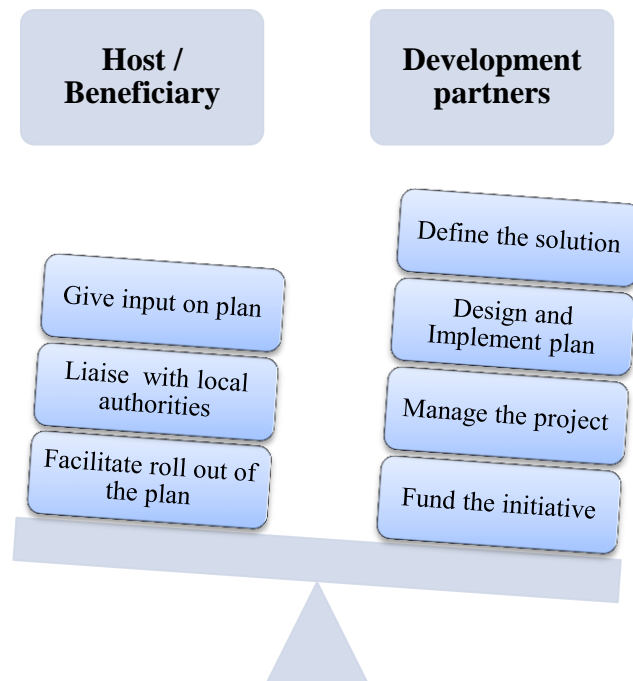


Fig 21: Balance of power weighted in favour of external parties

This confirms that the true power within the project was outside of the beneficiary country, in the hand of the partners who had financial control; with the local partner giving consensus and garnering official support as required in-country.

The decision makers within the project were grouped in a hierarchy (Fig. 22) as reported in interviews, where executive leadership as represented by all partners gave strategic direction to the project. This was largely driven by DIT and ICEE with feedback directly to the Funder. These decision makers, particularly the representative from UL, were generally more distant from the day-to-day activities of the project, but held the decision-making power where issues of project design, official recognition of the programme and protecting their respective organisations’

interest arose. Decisions made at a strategic level were filtered down to the project management staff across representative countries. However, there were no direct Universidade Lúrio representatives at this level. This level of personnel made decisions of a more operational nature, based on the strategic direction executive leadership. The ‘project implementers’ included all faculty, academic or administrative staff at Universidade Lúrio who reported to the project management team.

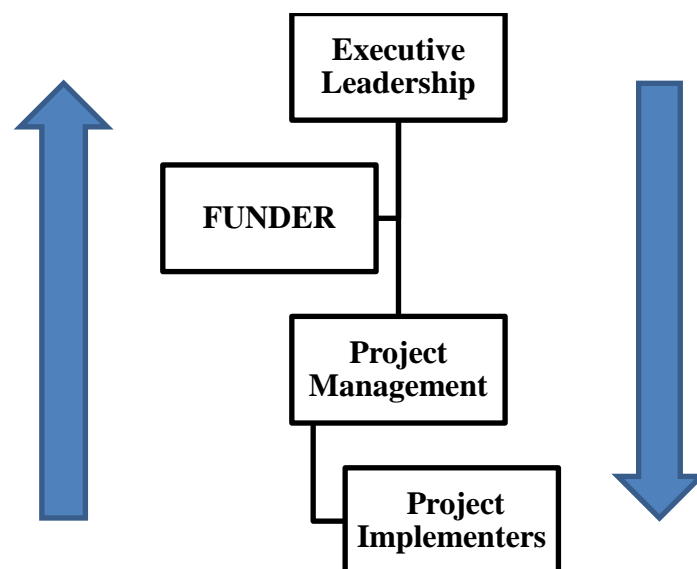


Fig. 22: Decision-making hierarchy within the project

This decision making structure supports a hierarchical approach to the MEP’s management, in keeping with general management structures within any organisation. However, the representation of all parties was not balanced,

supporting earlier results of the balance of power in favour of the external development partners.

7.3.4 Capacity Development

Capacity development was a sub-theme that came out prominently in several interviews. Part of the North-South development agenda was reportedly to grow local capacity so that the institution and related stakeholders would be capable of continuing with the programme and service in the long term, supporting sustainability of the initiative. The funding proposal demonstrated direct intent to identify the feasibility of new partnerships to promote sustainability over the course of the project, and through this, acknowledged the importance of sustainability of this initiative, with capacity development being central to issues of sustainability.

“The assumption from external partners was that the institution would take ownership of, and the running of the programme. However, this was not spelled out clearly. With the project funding coming to an end, the university was still not ready to take on all the responsibilities related to the optometry programme.” – Key Informant 4

There was mixed reporting on whether sustainability planning was adequately factored into the project plans initially. While there were plans toward an exit strategy following the initial grant, several key outputs had not been met by the end

of the project's term, as confirmed by earlier results. Analysis did however reveal that the external partners made some effort towards capacitating the local institution and relevant country structures for eventual programme takeover, including the provision of teaching and learning materials, grooming of local student professional leaders and contributions towards the research development agenda. The project also sent a small group of students to Brazil who would be trained as optometrists to return as the first group of local faculty.

Other capacity development initiatives, as reported in the interviews and confirmed through document analysis, included a plan to equip Vision Centres where future graduates would work and deliver services. However, this did not materialise within the project's initial funding period due to several reasons, which was considered by one local respondent to be one of the biggest failures of the project. This once again highlights the issue of scope creep, where the scope or extent of a project is insufficiently defined initially; resulting in delays or cost overruns (Project Smart, 2016). The project did, however, fulfil its commitment towards establishing a mutual learning network through collaborative research projects as well as an Irish-Mozambican student exchange programme.

It was noted by partners, and emphasised through the official IA evaluation, that the term of the partnership be extended for a period of between three and five years to consolidate the project's achievements. This led to a Phase II of the project which successfully addressed key sustainability concerns such as the strengthening of local faculty and development of sites for ongoing service delivery.

7.4 Discussion

Partnership has become a central concept in development cooperation since the mid-1980s and carries implicit connotations of mutual sharing and trust (Bailey & Dolan, 2011). The terms partnership and collaboration were used interchangeably in this project, which is not uncommon practice (Carnwell & Carson, 2008). Literature, however, differentiates somewhat between these two concepts.

Collaboration is defined as working “jointly with others especially in an intellectual endeavour” (Merriam Webster Dictionary, n.d.). This implies an informal relationship based on a sharing of knowledge between stakeholders with joint responsibility for the outcome, but does not necessarily ensure equality among the parties and therefore may embody a hierarchical structure (Glazer, et al., 2008). Partnership on the other hand, is defined by a legal relationship between two or more contractually associated parties as joint principles in a venture (Glazer, et al., 2008). Unlike collaboration, this definition implies a formal, structured relationship between equals with mutually defined objectives and goals. Collaboration therefore precedes partnership (Fig. 23) on the continuum of involvement, and as such may include other parties not expressly stated in any partnership agreement.

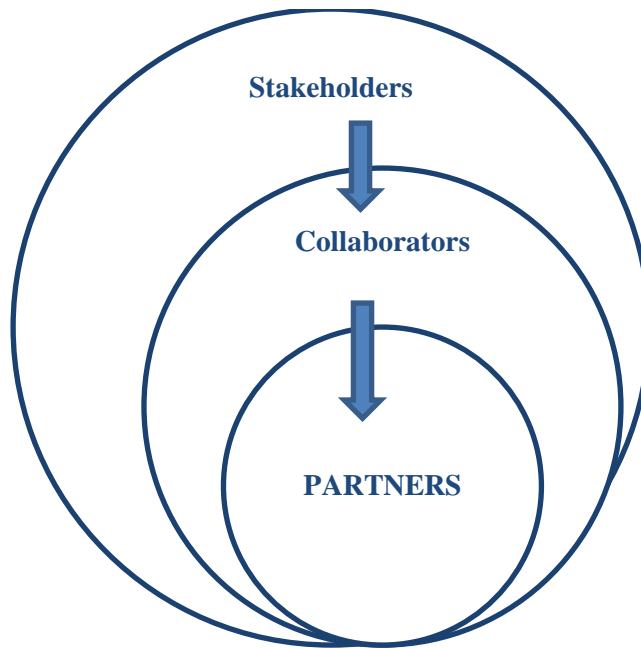


Fig 23: Spectrum of association in development projects

Partners are identified on the basis of the inherent requirements for the project to fulfil its basic objectives and have defined roles, responsibilities and accountabilities; whereas collaborators are typically entities which work jointly with project partners or implementers in the attainment of the project's objectives, where in the case of the MEP, UU may have been better defined as a collaborator rather than a partner. Stakeholders on the other hand, are more peripheral to the project and its implementation, and merely have an interest, vested or otherwise, in the project's activities and the achievement of its objectives, such as community members or industry. In the case of the MEP, the role of government may have been seen as either a collaborator or partner, dependent on how their associated role in the project would have been defined. In the continuum of association, partners are inclusively collaborators and stakeholders; however the reverse association does not apply (Fig. 21).

Much has been written about partnership and collaboration, with these being distinctive concepts, yet the two terms are still frequently used interchangeably (Glazer, et al., 2008). The findings in this research concur with literature that these two terms refer to different levels of cooperation, with collaboration being one component of partnership. It is necessary to differentiate between these two concepts when planning for projects in order to (Glazer, et al., 2008):

- Be clear about what each party is expecting of the other;
- Identify specific roles;
- Establish goals; and
- Develop outcomes.

Partnerships are promoted in the belief that the relationship between parties provides the potential to achieve significant benefits through joint action, bringing together unique and complementary resources. For effective collaboration, a strong network system is required, which includes entities working together to solve issues of mutual concern that are too big for any one organisation to handle on its own (Mandell, 1999). A true partnership requires nurturing to maintain a successful relationship. However, both concepts of partnership and collaboration carry the defining attributes of trust, respect, joint working and teamwork.

Central to principles for good practice within development partnerships is the location of power and decision-making; with some arguing that where imbalanced, developing countries can be kept in a subservient position, perpetuating

underdevelopment (Bailey & Dolan, 2011). Pitt (1998) (as cited by Norman (2012)), noted that there must be an information system within projects which provides for a flow of relevant, timely information for decision making. There was general acknowledgement by most respondents that the management of the partnership relationship was not ideal, though much of the shortcomings were attributed to the novelty of the partnership experience.

Historically, North-South development partners have often designed development solutions based on a perceived need. As ‘outsiders’, the perceived need is often far from the true or real need with many examples of million dollar projects which all seemed like good or practical ideas, failing (Hobbes, 2014). Alignment with global norms is a consideration for international recognition particularly in the case of training programmes. Global policy may sometimes drive development in a particular direction, which may not, however, be fitting when considering real need. This is coincident with a top-down, policy-driven approach where entities at a central level consider a partnership approach to be the right one for the solution proposed (OECD, 2006). Development partners, who often have a more global perspective, play a pivotal role in finding a balance between what is appropriate for the local setting, while ensuring alignment with global policies and practices.

Participatory development seeks to give the disenfranchised a part in designing initiatives for their benefit, in the hope that initiatives will be more acceptable, sustainable and successful (Sass, et al., 1995). Therefore, developing countries, with the assistance of development partners, should be allowed to be part of deciding on their own innovative solutions based on the true need as defined by locals (Norman, 2012).

Increasingly, there is a move towards South-South development solutions (United Nations Economic and Social Council, 2008). This implies a decreasing dependency on organisations in the north, whose solutions may be inappropriate to the local need, for development support and cooperation. However, even as in the case of the MEP where the ‘technical’ solution of the MEEM of training was designed by an organisation in the South and deemed inappropriate to the Mozambican context, South-South solutions may not necessarily imply an appropriate understanding of the local context, supporting the idea of Robert Chambers that ‘local people know best’ (Chambers, 1995).

The strategy informing the relationship between partners in this project was found to be was one of strategic fit and mutual benefit, in keeping with findings that university-level ‘north–south’ partnerships, between developed and developing countries are considered a critical part of successful research programmes (Clifford & Zaman, 2016). However, while the University of Ulster was listed as an official partner, evidence of their participation and contribution supports a more collaborative association with the project rather than a true partner, with Fowler suggesting caution in using the term partnership to describe aid relationships which do not embody any of the principles of partnership; but rather using more appropriate terms which include cooperation and collaboration (Fowler, 2000).

This brings into question the following:

- what it is that constitutes or defines a partnership,
- factors informing partner nominations,
- the value of individual partner contributions,

- the definition of a stakeholder, and
- the difference between partnership and collaboration.

The result that University of Ulster was peripheral to the planning and implementation of the project may be due to the fact that they did not have a dedicated member representative allocated to the project as did other partners. Therefore, a recommendation from this finding is that each core partner should have a dedicated staff member employed to represent the project for equal representivity and involvement in decision-making. All local stakeholders should also be represented at the organising committee level and invited to be part of project planning discussions. This is very important, since government as a partner within development initiatives is deemed indispensable for achieving a positive policy and planning framework (Osborne, 2002). Projects should also avoid the limitation of consulting key role players only through the local partner and should take collective ownership of this process.

Another important aspect critical to the overall success of partnerships is flexibility and adaptability. Partners should be willing to negotiate a path through emergent problems and to adapt to the changing environment, finding agreement on solutions that allow the overall aims of the project to be achieved.

In a multi-partner collaboration, every partner brings their own agendas and systems. Clifford et al (2016) also noted the reality that institutions in developed countries are often the ones establishing and funding the partnership; therefore these

collaborations have often been defined solely by the agenda of the initiating partner, with little to no input from the partnering institution in the developing country. In order to move beyond the ‘rhetoric of partnership’, it is imperative that partners openly address the issue of power in terms of ownership, decision making, funding, planning and evaluation (Bailey & Dolan, 2011). The MEP was, however, cited as being effective in achieving its main objectives, with notable programme progress despite considerable challenges during its initial phase (Ilal & Kleibl, 2014).

The finding that much of the decision-making power within the MEP lay with outside partners, suggests a hierarchical imbalance in the partnership. In designing development solutions, it has become imperative that the beneficiary be central to constituting the solution appropriate for their setting, with a shift towards participatory development as earlier highlighted. However, the uniqueness of the MEP was that one partner was strong in optometric education and research; the second partner had vast experience in optometry development work, and the third partner had no experience in optometry at all. Therefore, the feasibility of having equal contributions, in light of project efficiency within constrained timelines, may not have been supported; with a truly balanced partnership being waived in favour of the project achieving its desired outcomes within the funding cycle.

One of the tenets of a partnership is ‘transparent lines of communication within and between partner agencies’; whereas in a collaborative relationship, the principle of ‘participation in planning and decision-making’ (Carnwell & Carson, 2008) should hold true. Neither of these principles were explicitly fulfilled in this project for various reasons, therefore the project ‘partnership’ possessed attributes of both collaboration and partnership, where some ‘partners’ functioned more as collaborators, and some collaborators were not considered as partners initially when,

in fact, evidence suggests that they should have been. The model of partnership within the MEP was, however, considered appropriate for its purposes, with the Irish Aid evaluation noting that more management involvement and participation of the local partners be included into the design of future programmes (Ilal & Kleibl, 2014). Communication channels and protocols must be clearly identified for effective partner relationship management; and principles of inclusivity and flexibility around all aspects of the project must be adhered to. However, it is not always possible to include all potential persons who will likely come into contact with the project in stakeholder engagement sessions, particularly in a dynamic environment with a growing programme and high staff turnover ratios.

Qualified and experienced people, with complementary skills sets, were able to successfully overcome the institutional communication constraints. The model of management was noted as simple and cost-effective, with potential to be replicated in other countries though with an improved degree of involvement and participation of national partners to enhance ownership and sustainability (Ilal & Kleibl, 2014).

Cooperation with the government authorities in projects of this nature is important. The development sector has also generally been slow in recognising the role of the private sector in contributing to development objectives and broader poverty alleviation (Overseas Development Institute, 2011). Development projects in healthcare should therefore not restrict efforts towards public sector strengthening only, as a growing private sector will also contribute towards development, creating demand for services which will warrant a strengthened public sector response.

Public-private partnerships are also an effective means to address development needs (Rondinelli, 2004).

The finding in this research that partner roles and responsibilities were broadly articulated, but lacked the necessary detail for smooth and effective implementation are supported by findings from the IA evaluation (Ilal & Kleibl, 2014). A Memorandum of Understanding should clearly articulate the respective roles of partners so as to address specific areas of responsibility and avoid assumptions. However, it should also be noted that partner roles and responsibilities may change over time, which should be accounted for in any agreement (OECD, 2006).

Partnership agreements provide mechanisms to cope with relational, performance and situational risks that characterise inter-organisational relationships. Challenges for developing comprehensive partnership agreements include incorporating relational principles; accounting for organisational differences and keeping agreements flexible.

A good agreement should (The Partnerships Resource Centre, 2014):

- define the problem addressed;
- specify the mutual understanding of roles and responsibilities;
- articulate the commitments which partners must live up to;
- formalise the relationships between partners;
- provide a reference point for the collaboration that is to follow;
- support the partnering process by ensuring that partners have correctly developed answers about all aspects of the partnership;
- reduce the likelihood of misunderstandings and disputes;

- serve as an overall framework to manage the partnership and guide decision-making;
- help maintain focus on the original activities and objectives;
- keep track of project performance and review progress; and
- allow for flexibility.

Agreements should also be officiated at the beginning of the partnership as they feed into planning and help managing expectations within the partnership. They should address issues of relational risk, situational risk and performance risk (The Partnerships Resource Centre, 2014). Partnership agreements must also reflect the strengths of partners and increase effectiveness and efficiency in the use of partner resources (OECD, 2006), which was reflected to some extent in the MEP.

The success of partnerships depends on the level of cooperation and understanding achieved at all levels of the partnering organisations (BC Non-Profit Housing Association, 2004). Therefore, if clarity is achieved in relation to roles and responsibilities, the desired outcomes of the partnership are more likely to be achieved. Potential partners can therefore use the following checklist (Table 18) to addressing roles and functions in a partnership agreement, as identified in this research.

Table 18: Checklist for Development Partnerships

PARTNERSHIP CHECKLIST
Define, based on continuum of involvement or contribution, whether full partnership of proposed entities is warranted
Identify the core strengths and capacity of identified partners
Discuss and jointly define roles and functions of each partner
Identify specific, realistic resource contributions for each partner
Consider potential unplanned partner benefits
Establish a strong management and communication structure
Ensure each partner is equally represented, both at decision-making and implementation levels
Consider the feasibility of an independent, funded secretariat
Ensure regular engagement with relevant stakeholders and collaborators
Reflect on roles and functions regularly and amend where necessary
Have open lines of communication within the partnership
Evaluate the partnership

Many partnerships are formed where an individual is employed to devote part of their time to manage partnership issues using existing resources. However, these coordinators are often employed by one partner and in such instances can never be absolutely neutral in their actions as there will inevitably be a bias towards their employer rather than the partnership, whether consciously or explicitly. Therefore, a partnership secretariat is also recommended if real partnership is the intention, as it helps to create an objective coordinating structure (OECD, 2006).

Funding and management models should also be aligned with the exit strategy and sustainability plan for the project and should not encourage dependence. Where much of the financial responsibility rests with the external parties, transfer of ownership may make the initiative vulnerable to collapse if the local partner cannot assume the ongoing financial obligations associated with the programme. This may require additional development funds for a transition phase of handover, as was the case with the MEP.

Communication has been described as the glue that holds partnerships together (OECD, 2006). Acknowledging the complexities of communication, lessons for effective relationship management out of this project are summarised in Table 19.

Table 19: Factors for effective communication within partnerships

FACTORS ESSENTIAL TO EFFECTIVE COMMUNICATION WITHIN THE PARTNESHIP	
Initial	Ongoing
Identifying the Decision Makers	Transparency
Defining communication structure	Joint reporting
Understanding the decision flow	Clear reporting lines and protocols
Identifying the effectors	Cascade information to all levels
Promote a team approach	Negotiation and Flexibility

To make partnership inclusive, it is therefore important that all voices within it are heard. Ongoing communication with target groups is important, as well as regularly presenting partnership successes to policy makers, as was successfully accomplished in the MEP. Sufficient staff and financial resources should therefore be dedicated to communications, which can include forums for regular exchange of good practice within partnerships on national, regional or international levels (OECD, 2006).

Overall, the MEP was credited as having contributed to strengthening the culture of partnership among stakeholders working in the field of eye care. It also generated best practices when contributing to knowledge and experience sharing in North-North, North-South and South-South relationships. Despite some noted shortcomings, North-South cooperation and South-South inter- and intra-institutional interactions were notably strengthened through the MEP.

The results demonstrated that the project succeeded in its intent to establish an effective, mutual learning, cross-institutional North-South network; and that involvement in this project removed '*fear of the unknown*' that has now encouraged Irish partners to pursue future development partnership opportunities [Key Informant 9].

7.5 Conclusion

Partnerships are an effective means by which to deliver development solutions to countries in need. Development-based philanthropy is needed; however projects must encourage locally-led solutions and ownership of the initiative. When developed world partners define solutions for developing countries with little evidence of the appropriateness of those solutions for the local context, or the

necessary government support to back the proposed solution, this may bring into question whose interests the solution is really serving. External parties should act as consultants and facilitators, creating the space for locals to inform contextually appropriate solutions, rather than presenting prescribed solutions. Secondary contributors to the development initiative may be included as collaborators, if not formal partners, dependent on the necessary level of involvement.

Clear roles and responsibilities, management and decision-making structures should also be agreed upon, with balanced representation particularly in light of an overarching capacity development agenda. Effective communication, both within the partnership and amongst stakeholder groupings must be prioritised for smooth and effective relationship management and project roll-out.

CHAPTER 8:

A SYSTEMS FRAMEWORK FOR DEVELOPMENT PROJECTS AND PARTNERSHIPS IN EYE HEALTH TRAINING

8.1 Introduction

The aim of this research was to evaluate the MEP in order to develop a systems framework for development-led training projects in optometry specifically and other eye health professions more generally. A system generally has various inputs, which go through certain processes to produce certain outputs; which together accomplish the overall desired goal of the system. The pattern in which themes emerged out of this research lent itself to a framework approach for development projects in health care training, and formed the basis of the development of the final objective of this research study.

This chapter presents the outcome of the research process.

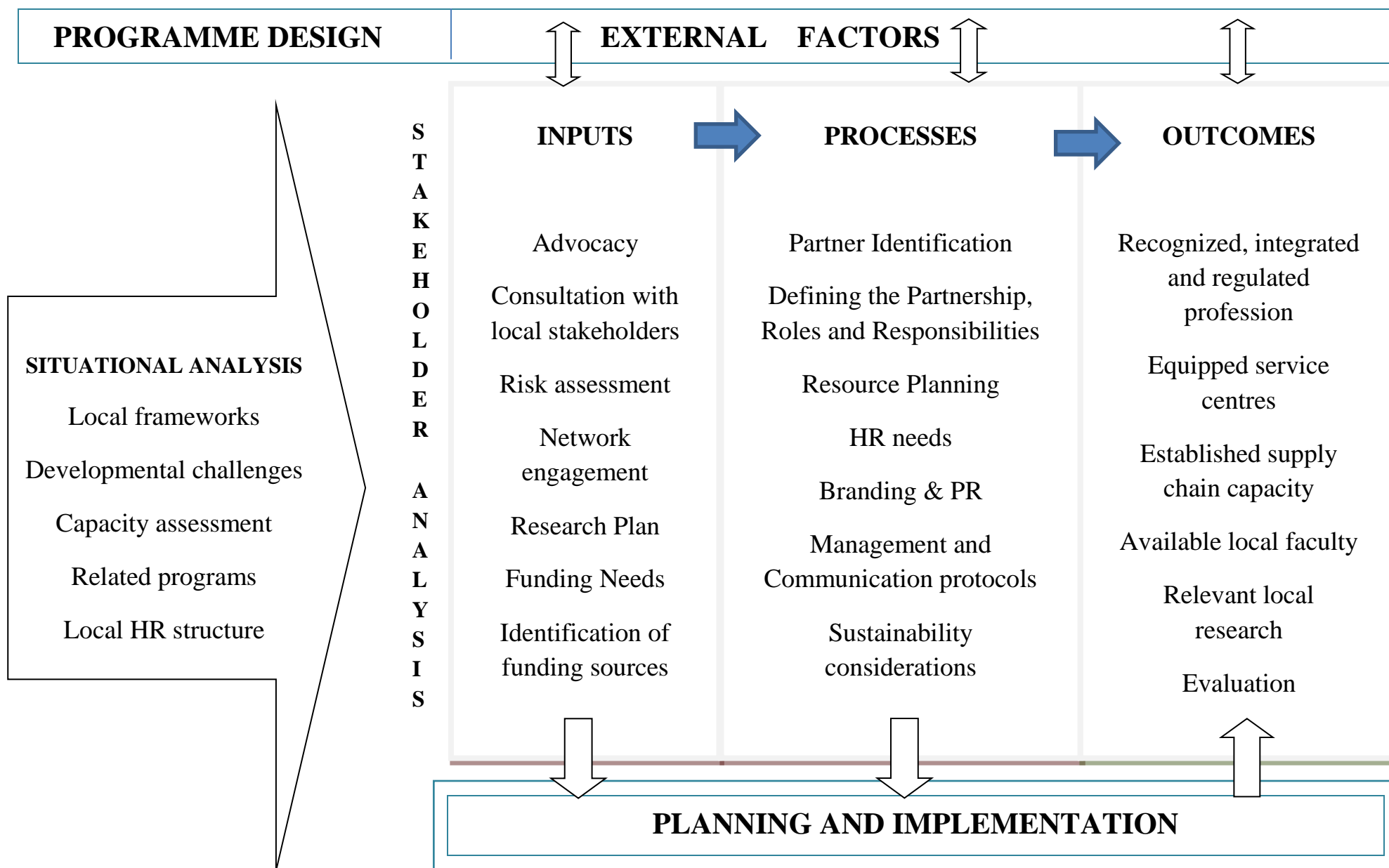
8.2 Framework

The resultant framework as presented in this chapter represents an overall supporting guide, to be used for development planning purposes, around which healthcare training projects can be built.

Using a systems analysis approach, relevant research results were extracted to define the basic elements of a development-led training project, which were combined in a way that would support an effective method of implementation for basic related

outcomes. Interrelations between these basic elements were evaluated and programmed into an integrated system. Attempts were made to apply a holistic perspective for planning purposes, by taking all aspects of the project into account, based on the MEP experience. This framework therefore serves to guide project planners and implementers of development training projects, in a sequential course of activities necessary for the successful achievement of planned project outcomes.

The framework is presented below (Figure 24):



8.3 Discussion

In the pre-planning, conceptual phase of a project, several key considerations need to be made to adequately inform the programme design. These include:

- Understanding the relevant developmental, educational and professional regulatory frameworks for the country or region of regard.
- A fair understanding of the specific overall developmental challenges facing the country or region of interest; including linguistic challenges and aspirations where required.
- An assessment of the in-country capacity relevant to the projected programme needs.
- An analysis of related professions and their relevance to the proposed trainees or planned service in light of a team-based approach to care.
- An understanding of the local human resource structure in relation to the proposed new health professionals.
- Participatory processes to understand the local perspective.
- A review of training models and emerging developments in eye health at regional and global levels.

The above components serve to inform the model of training and programme design appropriate to the local context, resources and country-specific developmental plans, within a globalised environment. Furthermore, an in-depth stakeholder analysis is also required, with particular emphasis on government, or other relevant local authorities or entities in-country.

Lowndes and Skelcher (1998) identified four stages in the life cycle of multi-organisational partnerships. These include:

- Pre-partnership collaboration;
- Partnership creation and consolidation;
- Partnership programme delivery; and
- Partnership termination or succession.

In the initial phase of the project, extensive, targeted advocacy with identified stakeholders must be undertaken, which includes all parties who may directly or indirectly be involved in facilitating the project, particularly in instances where the cadre to be trained has not previously existed in-country. It should also include those individuals or structures that will be key to driving or supporting the requisite processes going forward.

It is also important for development partners to engage in consultative processes with local individuals or KI groupings to help shape the proposed programme design to the local context, and drive acceptance and local ownership of the ongoing initiative. An assessment of all internal and external risks must also be carried out, and a proactive plan to mitigate for, or address these as they arise, be compiled. Initiating partners must engage their relevant networks, identifying strategic funding sources or potential collaborators which would strengthen or add value to the proposed initiative.

These framework factors all form a necessary part of the “Programme Design” phase of the proposed project. This combined information is then used to inform the forward planning and implementation of the proposed project, leading into the “Input” phase, which stipulates requisite inputs for planning and implementation. Among these are advocacy and consultation with local stakeholders for the relevant programme, most importantly relevant government agencies; conducting a risk assessment, identification of funding sources based on the situational and stakeholder analyses assessments and drafting a proposed research plan based on identified development needs.

The information from the ‘Input’ phase informs planning and implementation processes such as the identification of suitable partners, following which detailed partner agreements can be drawn up based on partner strengths and resources. This phase also includes planning for operational requirements such as human resources, financial or other technical resources, developing a publicity plan, and operationalizing the partnership’s management and communication structures.

Since research has been identified as a key supporter and informer of development activities, a clear research plan should be drawn up related either to developmental challenges identified in the programme design phase, or to the proposed initiative itself, to provide necessary evidence for on-going in-country professional, service or structural development. A detailed funding plan with relevant funding sources is also required, which addresses all aspects relating to the project, and the requirements for the on-going programme.

Following stakeholder analysis, consultative, advocacy and other inputs in the programme design and pre-planning phases, project partners can then be identified and the undertaking formalised through an official partnership agreement which should clearly outline specific partner roles and responsibilities. Collaborators should also be identified, together with their respective individual contributions.

Addressing components in the ‘Input’ and ‘Processes’ phases contributes towards achieving the outcomes desired from the HR development investment most notably cadres who are officially recognised locally by relevant government agencies, ensuring that the necessary supportive infrastructure is in place for new graduates to actively engage in the intended service deliver, and by producing appropriate research findings which support the long term growth of the profession and its service in-country.

This framework functions as an open system, and is therefore prone to influences from the external environment, which may include political factors, global professional development considerations, funding constraints or opportunities, and local bureaucracies. External factors such as the global financial climate and its economic impact on countries or organisations may demand a review of partner responsibilities, particularly financial; requiring some flexibility in the partnership structure and areas of responsibility. Once the partnership has been formalised, then management and communication protocols at all levels within and between partner organisations must be clarified. Adequate resourcing for all aspects of the project, including HR capacity, must be catered for.

Providing for the educational programme needs such as access to infrastructure, teaching and learning resources, technology considerations and other generic or specific programme requirements is imperative for successful roll-out of the training, particularly within a development context. Longer term sustainability considerations such as the availability of adequately trained local faculty, expanded infrastructure resources, official recognition of the new trainees by relevant authorities and integration of trainees into the health system and support for service delivery at all levels must be factored into the planning and implementation phases so that the local beneficiary partner is able to continue with the programme once the funded project term has ended.

Development projects would do well to actively develop a recognisable brand within the local and relevant global communities through regular, updated media and professional network coverage or exposure, as this serves to draw appropriately skilled personnel or expatriate faculty to the project where no local capacity exists, and it has the potential to attract further funding for related project streams or longer term programme needs.

An explanatory guide to the use of this framework [Appendix 5] has been developed. However, projects differ and therefore the phases may not transition in absolute alignment with the framework model, as projects evolve and respond to needs on the ground. However, the various components should still be addressed at an appropriate time within the project.

However, the framework is not without limitations. The data collected focussed largely on 'hard' issues i.e. process-related or structural issues as would comply with an

operational framework model. However, in hindsight, the equally important ‘soft’ issues such as partner or cultural dynamics (important in a multi-country partnership) and project-related attitudinal shifts across this lifecycle of the project, were not adequately captured in the data, and therefore were not able to be reflected in the framework. Similarly, adequately capturing interpretive perspectives from KIs was difficult to incorporate in an input / process / output model. Therefore, it is recommended that future research of this nature purposefully structure the data collection, analysis and representation of interpretive results to address this shortcoming.

Similar frameworks for public health programmes have been designed. The RE-AIM framework (Glasgow, et al., 1999) was designed to evaluate the impact of health promotion interventions on health programmes, in recognition of the need to evaluate the public health significance of interventions. It was conceptualised that five factors, viz. reach, efficacy, adoption, implementation and maintenance constitute the public health impact of health promotion activities, compatible with systems-based thinking. However, it recognised the limitations of efficacy-based research.

While this framework has been intended as a guide, the limitations of systems analysis as a tool for use in development projects are noted as follows:

- Development projects are often opportunistic in nature, in response to available funding. Therefore, projects may not be able to implement the guide in the sequential format it presents;
- Different country or regional contexts may demand different inputs based on their state of development, role-players, situational data and the experience or track record of available to potential partners;

- Differing perspectives on developmental needs would likely require considerations not captured in the framework;
- Systems frameworks have been noted to have limitations in adequately capturing the more qualitative dynamics within development projects and partnerships.

This chapter presented the main objective of the study i.e. a systems framework for development partnerships and projects in eye health, drawn out of the MEP experience. While this framework emerged out of an eye health project, it may be used as a guide and applied to the planning and implementation of development projects in health care training across professions.

CHAPTER 9:

CONCLUSION

“Experience isn’t the best teacher. Evaluated experience is” (Maxwell, 2014).

9.1 Introduction

There is a dearth of research relating to development projects and practices in eye health generally, and optometry training specifically. This research project was born out a keen interest to positively inform development practices in optometric service development, by exploring and evaluating the experiences of one such case study, the MEP.

Development projects in eye health have evolved over the recent past from more ad hoc, service delivery approaches by foreign volunteer teams, towards the development of local HR capacity. The rationale has been that the revised approach can more sustainably serve the huge unmet need for eye care in under-resourced countries for the long term. Global estimates that 285 million people, mainly in the developing world, are needlessly visually impaired largely due to the lack of trained eye health professionals, and the knowledge that URE is the second leading cause of avoidable vision impairment globally resulted in the emergence of the training of professional optometrists as a sustainable solution to addressing these eye health challenges (Naidoo 2000, Holden and Resnikoff 2002, Minto 2008).

To this end, regional school of optometry were proposed for Africa in the mid-2000s (Minto, 2008), with the Malawi school being the first such initiative intended to address the optometric training needs of countries in the English-speaking Southern Africa region, where previously South Africa was the only country to train optometrists. The MEP soon

followed in 2008, this time to address the training needs of a somewhat isolated Portuguese-speaking Africa region through a multi-partner, donor-funded development initiative. Both projects proposed a novel MEEM of training, intended to produce both two year diploma graduates with mainly technical skills and four year bachelor trained optometrists with clinical diagnostic skills, in a linked two-tiered structure. However the factors that informed and supported the development of the proposed model of training remained unknown. Furthermore, there was a lack of research relating to the planning and implementation of optometry training projects in the developing world.

The aim of the research, therefore, was to evaluate the MEP in order to develop a framework for development-led training projects in optometry. More specifically, the research sought to:

- Explore the rationale informing the MEP;
- Review factors informing the project's model;
- Investigate factors influencing the application of the model;
- Identify challenges and barriers to the implementation process;
- Review the rationale and feasibility for the partnership approach;
- Evaluate operational aspects relating to the partnership; and
- Develop a framework for multi-partner development-funded partnerships in optometry.

This research used an evaluative approach to identify factors for success in the design, planning and implementation of donor-funded development projects in optometry, using the MEP as a case study. It was hoped that through this effort, an evidence base

informing best practices in this regard could be developed, which would serve as a guide for new initiatives toward the same.

The introductory chapters presented the context of the research, which included the global burden of VI, in particular URE; global developments in optometry and related advocacy frameworks, and investing in human resources for health as a development imperative. They further described the socio-economic consequences of VI and subsequent advocacy efforts in support of comprehensive solutions to address the unmet eye health needs of people living in developing countries. The background to the status of eye health and human resource capacity in Mozambique was presented as well as to the identified gap in the training of professional optometrists; leading into the rationale for the MEP and its intended objectives. The literature review broadly discussed common challenges within North-South development and educational partnerships or projects respectively.

This chapter presents a summary of the main findings of this research. It will also describe the limitations within the research, the implications of the research findings and value of the study, and propose further related research in this area. The chapter concludes with a list of presentations and publications emanating from the research.

9.3 Summary of the Results

The results of this research demonstrated that the MEP was not a pre-planned concept, but rather opportune in light of available funding from Irish Aid for higher education and research development projects in the South. The project proposal was compiled in response to this, and the funding subsequently awarded. Therefore, the MEP was constrained by time to deliver on its stated outputs within the term of the five year grant

period without an adequate planning phase and was constrained in terms of the pre-application consultation and research.

The key failures of the MEP were identified as follows:

- While the project had planned for a two-tiered, multiple entry and exit model of training in optometry to support a massification strategy, this was never realised. Rather, a conventional model of training in optometry was later agreed to by all for the process of moving forward. While the training programme still addresses the training need for optometrists, the programme is limited in its capacity to train large numbers, and therefore, it will take much longer than anticipated to produce the number of optometrists required for the country.
- The project also failed in actualising the regional concept and model of training, proposed more for its economic value, but which was limited in reality largely due to a lack of consultation within the region. This would suggest then that countries like Angola which also has a large population and need for optometrists, may need to invest in their own programmes.
- The establishment of an institutional vision centre remained a challenge throughout much of the project, and while a much smaller, equipped training clinic was eventually achieved, this fell short of the intended plan, therefore limiting the training capacity.
- Developing a spectacle supply or manufacture system was also never a deliberate consideration in the project, and the lack of planning for spectacle service provision is considered a significant shortcoming in a project primarily aimed at addressing the issue of URE.

The project proposed an integrated programme of optometric education, vision care delivery and research within its five year term; while also expecting to graduate professional optometrists within this time frame. The first shortcoming of note was therefore the mismatch between the funding cycle and the project cycle, against expected outputs. Given time constraints, a crucial component for success in development work i.e. thorough situational and stakeholder analyses, were not conducted prior to the commencement of the project. This later proved significant when issues around the inappropriateness of the proposed training model and the limitations of not including relevant government departments in key discussions around the initiative emerged. Furthermore, the inherent challenges within Mozambique's basic education system, which were related to its overall state of underdevelopment, proved a confounding limitation to student progress and academic advances particularly in mathematics and sciences which are both central to undergraduate training in optometry.

The research however found that the MEP was justified in its rationale, based on available evidence relating to the burden of VI on the African continent in general, and the lack of trained human resources to address URE in the Lusophone Africa region. This is supported by earlier research that developing countries lack the necessary infrastructure, and funding to drive health and education programmes (Robertson, et al., 2009); and that improvements in health support a country's economic development (Bloom & Canning, 2000). The MEP was also aligned with Mozambique's broader eye health development strategy, though the absence of optometry as part of its national plan for eye health was noted; suggesting that significant advocacy work was required to bring optometry and its role in addressing the burden of URE to the fore in Mozambique. Other research has confirmed that by addressing URE, a country's productive potential improves (Thompson, et al., 2014). However, the results of this research exposed some

significant shortcomings in the way the MEP was conceptualized, planned and implemented.

The results of the research emerged in three broad categories namely lessons from the design and implementation of the planned training model, operational challenges relating to the implementation of the project's objectives and lessons for development partnerships in eye health projects.

The main findings of the research are summarised below:

9.3.1 Factors informing the design of development training models in optometry

In the experience of the MEP, the rationale for the project was informed largely by an identified need in the targeted country for the expansion of training opportunities in eye health professions generally, and the absence of any optometry training in the country more specifically. There was also a keen interest from development partners to test the feasibility of the theoretical MEEM of training in optometry, and developing an evidence base for projects of this nature. The concept of the MEEM of training in optometry appears to have been driven by advocacy imperatives, as in the case of the MEP; with a need for countries to address the VISION 2020 challenge of eliminating all causes of avoidable blindness in the world by the year 2020 since the MEEM structure was based on the principle of massification, with its intended purpose being that large numbers of graduates could be produced in a shorter duration of time to meet the URE needs at lower levels of care within the health system. However, intake numbers remained relatively low across the five year project duration.

A restrictive condition of training in the MEEM was that graduates at this level would be confined to work within the public health sector. This was meant to ensure that optometric technician graduates were not lost to the private sector, but rather served where the need was greatest, and thereby have a greater impact in the elimination of URE as an avoidable cause of VI in Mozambique. The MEEM also planned to produce optometrists with higher level clinical skills who could manage the need for primary eye care in the absence of ophthalmologists in many of the regions in Mozambique, as well as creating a career path for optometric technicians who aspired to upgrade their qualifications at a later stage. However, available evidence is that there were inherent structural problems with the MEEM as an alternate, developmental model of training in optometry, including difficulties linking the 2 levels which have different academic entrance requirements.

The local perspective in relation to this model of training in optometry for the Mozambican context proved significant in the experience of the MEP. Perceptions relating to global recognition of training, particularly in the optometric technician category, together with other factors such as legislative restrictions for minimum levels of training at university level, resulted in the inevitable scrapping of the 2 + 2 MEEM in Mozambique. Even in the absence of these limiting factors, the existence of an already established mid-level cadre responsible for primary eye care and basic refractive service provision in Mozambique was perceived as meeting this need, though research showed that these personnel were not adequately trained in refractive error and their competencies were found to be below that required for this purpose (Shah, et al., 2015). The MEEM in Mozambique was, however, abandoned in place of a conventional four year bachelor's degree and has not been pursued beyond the initial countries of implementation. Therefore, understanding the local context, HR structure and existing in-country capacity

is important for appropriately designing any new training programme. Furthermore, knowledge of developmental and legislative frameworks is important as it can save the project time and resources.

Other considerations in designing the MEP's regional MEEM of training included the projected cost saving that a regional centre represented, as well as the inevitable outcome of regional uniformity in training which promotes integration and mobility across countries within a region; a necessity in the eye health sector in developing countries. As demonstrated by the MEP, regional consultation is an important consideration in the design phase of a regional model of training, since buy-in must be sought from all targeted countries if the objectives of the project are to be fully realized. Furthermore, while foreign language competency may be an important consideration in the initial phase of the project, developmental aspirations towards English language competency, as well as greater inclusion in the global interchange and related developments must be considered. Development programmes should therefore not perpetuate linguistic exclusion by investing heavily in language-specific teaching and learning resources. Planning considerations for medium to long term dual medium programmes should be made, where such aspirations exist, in contexts where English is not the official language.

9.3.2 Implementation considerations for the establishment of a new professional training programme

The complexity of development as a concept demands that rigorous planning be undertaken to mitigate for any potential risks prior to implementation of a project. One key finding in this research was the lack of distinction between the 'development'

investment, and the longer term locally owned programme. The results of this research demonstrated that this may be linked to the lack of detailed planning. The findings of this research confirmed the triple constraint of cost, time and scope which plagues many projects, and the resultant impact of these constraints on the quality of the intervention and meeting the ‘customer expectation’; which in the case of the MEP was delivering a ‘product’ or graduate professional appropriate to, and accepted by the local context and all stakeholders respectively. The failure of the MEEM underscores the need to pursue local participation, in line with previous findings, in defining development solutions. This would serve to neutralize perceptions that external development organizations’ may be imposing prescribed or inappropriate models or solutions, thereby fostering inclusivity, transparent partner relations and local ownership. The best development alternative for the MEP was therefore a negotiated settlement, factoring in the global experience and perspective of the external partners, as well as input from the local context and country-specific developmental aspirations.

The research demonstrated strongly that there is a need to advocate with relevant government departments, the academic and professional communities both for the recognition of the new profession being developed, and acceptance of its scope of practice in relation to other eye health professions. Furthermore, proactive and consistent advocacy and consultation with all relevant bodies, noted as a shortcoming in the MEP, may serve to facilitate smooth implementation of operational requirements for the project and programme such as curricula approvals and actioning a research agenda.

It is also necessary to establish a profession-specific identity for the potential student intake, in order to create an appropriate understanding of the profession and its career opportunities, particularly where no frame of reference exists. For the MEP, this was achieved only once expatriate faculty were introduced into the project in its second year. Therefore, recommendations from this research were that project staff, particularly professional staff, should be available in-country at the start of the project to facilitate smooth implementation of the profession's agenda.

Included in the recommendations for establishing a professional identity are that advocacy activities should include a recommended approach towards team based eye care and how an optometrist can function in relation to other professions such as ophthalmology and optometric technicians in the case of Mozambique. Further related recommendations for longer term growth of the profession are that development partners should initiate or facilitate the establishment of initial regulatory structures for the newly created profession, as these serve to provide ethical oversight for the newly established profession, deter untrained individuals from practicing within the profession, and guide the ongoing evolution of training requirements in-country. The research further raised the importance of addressing issues of graduate placement timeously, so that professional integration, particularly within the public health system, is not hampered. The private sector should also not be excluded from any development strategy, given that the development of the private sector also serves to contribute towards overall socioeconomic development in a country. The research also demonstrated that there must be a clear funding model for any development project, which should take into account monetary contributions of all parties for planning and sustainability purposes.

Another key factor for consideration in the planning phase is project staffing. Development organisations need to be conscious of the imperative to include local staff in the project's management and administration as part of overall capacity development and fostering local ownership. Efforts also need to be made towards ensuring consistency and retention of staffing within the project and adequate orientation for new, particularly expatriate staff.

Other resource considerations such as the availability of appropriate teaching and learning materials, equipment and long term maintenance of equipment, infrastructure and supply chain needs for spectacle service provision must also be included in a detailed plan for a quality, sustainable project outcomes. Overall, results indicate that there should have been a fully funded programme, and that a separate research grant, as the danger of adapting a research grant to suit programme needs presents a risk to the achievement of a project's objectives.

9.3.3 Partnership lessons for development funded projects

The lack of identification of all relevant stakeholders early in the MEP proved a significant limitation, where key government ministries were largely peripheral to the project's initial undertakings. In a programme for the establishment of a new professional training programme, the Ministry of Education is a key stakeholder, since this body drives the education agenda in a country. In addition, related professional organisations and other government entities, in this case the Ministry of Health which was earmarked to be the primary employer of optometry graduates, should also be considered and consulted in the planning phase. Not including these role-players in strategic planning discussions,

or part of the official partnership, resulted in delays getting the MEP curriculum approved, official recognition of the profession of optometry by relevant authorities in the country, as well as securing the employment of graduates within the public health system, which was a key output for the project. Government's inclusion in educational partnerships can therefore not be overlooked, particularly when new cadres are being developed. This does create a conundrum as respect for the local partner and their leadership in relating to and consulting other local stakeholders has to be balanced with the need to access key stakeholders directly.

The research demonstrated that while the development solutions may be donor- or externally driven with a focus on the country in need, these projects can also provide reciprocal benefits for developed world partners. It is important, however, to maintain a fair balance of power amongst partners, avoiding a hierarchical structure to management or decision-making. Not clearly outlining roles and responsibilities of partners, can also negatively impact local ownership and capacity development.

9.4 Significance of the study and contributions of this research

The results of the research informed the development of a framework as presented and explained in Chapter 8. This is significant since no such framework exists for the development of eye health or optometry training projects as part of a VISION 2020 agenda. The framework will serve to guide decision-makers, which may include aid funders, development organisations, tertiary institutions in the developing world or

government entities interested in establishing a new development-led School of Optometry using a systems approach.

The findings of this research will also add value to the work of various role-players in eye health development such as public health advocacy organisations. The framework introduces a structure by which organisations can drive the development of new professional cadres within the context of health systems capacitation towards improved health outcomes. The framework may be applied not only in Africa, but all other developing regions of the world. Averting potential pitfalls through the application of this framework will ensure that funding invested into development projects can more effectively be utilised, with greater return on investment for all partners, and more sustainable outcomes.

9.5 Implications of this research

Research into the establishment of eye health training programmes within a development context is extremely limited. It is therefore recommended that this framework be evaluated for its relevance in other regions or contexts, and modified, where necessary. It may further be tested for use in non-eye health professions, and adapted accordingly for use in this regard, since many developing countries face HR challenges across professional groupings.

The results of this research suggest that, in the context of longer term professional training programmes, that funders or aid agencies consider extending the funding term to include pre-implementation requirements as described in the framework, as well as post-implementation phase which supports sustainability of the project's investments. By adopting a systems approach to the design, planning and implementation of development projects in optometry, it is anticipated that stakeholders will be guided towards increased efficiency in project output, cost containment and constructive partner relations.

9.6 Value of the study

The experience of the MEP has contributed to shaping policies and strategies for optometric development and training. An important contribution of the research, therefore, is the presentation of a framework which can be used to guide stakeholders in the planning and implementation of development training within a health context.

9.7 Limitations of the study

The limitations of the study were identified as follows:

- While every effort was made by the researcher to remain objective during the data collection and analysis phases, this was difficult to control as the researcher had been directly exposed to the MEP prior to the inception of the research. This likely influenced the researcher's perspective and interpretation or analysis of data and there may, therefore, have been some degree of unintended bias on the part of the researcher, with reflexivity possibly being

undeniably linked to the researcher's thoughts or representation of the work, and though not intended, limiting objectivity.

- The researcher had worked with several of the KIs, both on this project and in other contexts. Having a prior professional association with these KIs may also have influenced the depth of interview responses, since these KIs could have made the assumption that the researcher 'understood', or was familiar with some of the issues, having been directly exposed to them. This, if applicable, is a possible form of social influence where respondents answer what they believe the researcher thinks or expects to hear, based on this prior interaction. The existence of this would, however, be difficult to quantify in this research. Attempts were made by the researcher, in the questioning style, to elicit full descriptive responses as if there had been no prior exposure to the project by the researcher. The majority of the interviewees presented candid responses on key foundational challenges in the project; therefore this is not considered to have had any significant effect on the research responses or results.
- Data was collected in a phased approach over an approximate period 3 year period. Interviews conducted later in the project, when many of the significant project challenges had already been overcome, may not have revealed points which could otherwise have been considered significant in the earlier stages, as interviewees may possibly have deemed them to be ultimately insignificant or inconsequential at the time of data collection. The final interviews coincided with the end of the project, and it may be a possible that recollection of earlier events or challenges relevant to the project may not have been accurate. There were also several portfolio changes of KIs within the project

and some were no longer close to project detail at the time of the interview. The researcher did, however, attempt to structure questions to negate the effect of these, and probe with the intention of extracting ALL relevant project-related issues from its inception.

- In the absence of back-up audio recording of interviews, the researcher had to rely on careful and accurate transcription. Given the pace at which an interview progresses, the focus of the interview was more on the KI responses, i.e. ‘the meat’ of the data. Therefore, the researcher was not always able to capture the unspoken subtleties such as tone of voice, attitudinal responses, relationship dynamics and cultural factors, which are also important in qualitative data capturing and analysis.
- Recording error may also have been possible, particularly in this study where there was no back up to audio files. It is generally recognised that the more an interviewer has to write down, the more likely he/she is to make a mistake in the recording of that data since there is a tendency to abbreviate answers, though not necessarily correctly (Mathers, et al., 1998). However, where uncertainty or lack of clarity existed, the researcher followed up with the relevant KI for clarity.
- KI quotes selected for representation in the write-up were those considered to give effect the themes developed in the analysis. However, there was an imbalance in KI perspectives represented and on reflection, possibly indicated researcher bias based on this prior exposure. While all KI inputs were used in the development of themes, those quoted more frequently were typically project personnel more closely linked to the project. Key Informant 2 who was quoted the most was a senior Mozambican official, and the Mozambican

perspective was deemed important in reflecting the implementation experience of the project. Overall, quotes that were deemed to have strategic value in developing a project of this nature were utilised.

- The following examples may reflect the KIs expectation of the researcher's familiarity with project-related issues:
 - *BHVI wanted to design the curriculum so educational resources could fit into the design [KI3].*
 - Assumption that researcher understood what educational resources were being referred to.
 - *The project has impacted optometry in Ireland through development such as OGS. [KI-9]*
 - Implied understanding of what / who OGS and its involvement in Ireland was.
 - *The Mozambique Eye Care Coalition was a good forum for NGOs to come together. It was a good platform to bounce off ideas.*
 - No explanation as to what the Mozambique Eye Care Coalition was.

These excerpts provide evidence that respondents relied on researcher's prior knowledge of the Mozambican context and MEP in their responses, not given full explanations in their responses.

- As the coding and analysis processes were conducted by the researcher alone, some subjectivity in interpretation may have been likely, based on this prior exposure.

- Not all project documentation, notably email communication, was available to the researcher particularly in the latter stages of the project. Furthermore, not all findings from the interview data could possibly have been validated by means of available documentary evidence.
- The researcher has a responsibility to report on the actual research findings; where in qualitative research, even a singular perspective is deemed significant. However, there were instances where reported results contradicted the lived experience or understanding of senior project representatives, two of whom also served as supervisors in this research, with this resulting in a conflict between accuracy of reporting and true representation of the ‘facts’. The researcher was careful to balance the two, without downplaying the significance of any one perspective in relation to the value it added to the research.
- The research covered a wide spectrum of components of the MEP relating to development optometry, viz. models of training, project implementation, educational, and partnership considerations. It is the researcher’s opinion that each of these is significant in their own right and could not be covered in sufficient depth in this research, given the breath of the topic. Recommendations for future research will therefore be made in this regard.
- The limits of frameworks are acknowledged, as they may not be applicable in all contexts, taking into account all identified components. Furthermore, capturing the ‘softer’ issues in the qualitative such as attitudinal issues was difficult, both in the absence of back-up audio recordings, as well as in reference to the framework, since the framework prevents a somewhat

structured approach to implementing the project, and is limited in its flexibility to fully articulate or accommodate for these.

9.8 Recommendations and further suggested research

An immediate recommendation would be for the framework developed through this research to be tested in the context of a new development project in optometric training in another country or region.

Specific elements requiring more in-depth investigation include:

- Developing a business plan which addresses the generic requirements for establishing a new developing-world School of Optometry.
- More detailed research into the specific operational challenges facing the establishment of developing world Schools of Optometry which may include aspects related to clinical training, faculty-related factors, teaching and learning practices or capacity development.
- A post evaluation study on the challenges facing local institutions once the development-funded cycle or contributions have ended.
- Language factors and their implications for developing world training solutions in the context of globalisation.

9.9 Dissemination

Results from this research have been disseminated in the following fora / publications:

European Council of Optometry and Optics Conference

Dublin 2012 [Poster presentation]

‘Faculty Recruitment for a Portuguese-language optometry programme: Experiences and challenges of the Mozambique Eyecare Project’

European Council of Optometry and Optics Conference

Warsaw, 2014 [Podium presentation]

‘Structural and student-centred factors impacting the successful delivery of quality pedagogy in a new undergraduate optometry training programme in Mozambique’

BMC Medical Education [Publication provisionally accepted]

2016

‘Framing professional programmes within development projects: driving longer term recognition and integration’

International Agency for the Prevention of Blindness

10th General Assembly, 2016

“Professional Recognition and Integration: Critical success factors in the development of new health cadres” [POSTER]

IN DRAFT

‘Partnerships for development projects in eye health: best practice considerations’

CONCEPTUAL PAPERS

- Operationalising development projects in optometry: Lessons from the MEP
- Applying a systems framework to optometry development projects
- An inclusive approach to development projects: Mitigating risks and driving sustainability of new training programmes
- Research as a key output in development projects: opportunities and challenges from the MEP

9.10 Conclusion

This chapter presented a summary of the intended objectives of the study and its related results. It further presented the value and contribution of the research results to the work of developed and developing-world agencies interested in expanding access to eye health training and services as part of a developmental agenda. It presented the limitations and recommendations for future research emanating from the study.

The results of this study confirmed that research-focused aid funding has the potential to make a significant developmental impact through human resources and service development projects. However, development strategies must be informed by the local context for projects to succeed and have long term value. Detailed planning and extensive consultation is required to ensure a smooth roll-out of project activities and partnership administration. In addition, development aspirations, including that of language and private sector interests must be addressed as part of designing a new optometric training programme. Sustainability considerations must also be factored into the planning phase so that the development investment presents long term value for both beneficiaries and the aid funder, and ultimately meets its intended developmental objectives. The application of the systems framework developed through this research

will guide stakeholders in eye health projects towards the achievement of the same. However, flexibility would be an important consideration since contexts will vary and thereby define specific needs.

Given the scale of such projects, a phasing out approach with extended support from collaborating partners is vital to ensure the sustainability of such initiatives until such time as the local institution has fully integrated all aspects of the programme into its regular planning and budgeting. The results of this research therefore serve as a reference point for capacity strengthening of eye health stakeholders at the national and international levels. Ongoing advocacy and support for these development initiatives from external partners may, however, still be needed to continue influencing government policies and strategies towards the achievement of VISION 2020 objectives.

REFERENCES

- Adelman, I. & Morris, C., 1997. Development History and its Implications for Development Theory: An Editorial. *World Development*, 25(6), pp. 831-840.
- Akinwale, A., 2011. Language Barrier as the Bane of Development in. *Africana*, 5(2), pp. 76-97.

- Amagoh, F., 2008. Perspectives on Organizational Change: Systems and Complexity Theories. *The Innovation Journal: The Public Sector Innovation Journal*, 13(3), p. 14.
- Ambrecht, J., 2014. Medical equipment in Developing Nations. *Borgen Magazine*, June.
- Anand, S. & Barnighausen, T., 2004. Human resources and health outcomes: cross-country econometric study. *The Lancet*, 364(9445), pp. 1603-1609.
- Anderson, R., 2007. *Thematic Content Analysis: Descriptive Presentation of Qualitative data*. [Online]
Available at: www.wellknowingconsulting.org/.../pdfs/ThematicContentAnalysis.pdf
[Accessed 7 November 2015].
- Anyaegbunam, C., Mefalopulos, P. & Moetsabi, T., 2004. Communication for Development in Action. In: *Participatory Rural Communication Appraisal: A Handbook*. Rome: Food and Agricultural Organisation of the United Nations, p. 13.
- Atieno, O., 2009. An analysis of the strengths and limitation of qualitative and quantitative research paradigms. *Problems of Education in the 21st Century*, Volume 13.
- Australian Bureau of Statistics, 2012. *International relations: Where we give Aid*. [Online]
Available at:
<http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/1301.0~2012~Main%20Features~Where%20we%20give%20aid~218>
[Accessed 8 April 2015].
- Avon Primary Care Research Collaborative, 2015. *Evaluation Methodology*. [Online]
Available at: <http://www.apcrc.nhs.uk/evaluation/methodology.htm>
[Accessed 26 October 2015].
- Babbie, E. & Mouton, J., 2007. *The practice of Social Research*. South African ed. Oxford: Oxford University Press.
- Bailey, F. & Dolan, A., 2011. The Meaning of Partnership in Development: Lessons for Development Education. *Policy and Practice: A Development Education Review*, Volume 13, pp. 30-48.
- Bamgose, A., 2014. The language factor in development goals. *Journal of Multilingual and Multicultural Development*, 35(7), pp. 646-657.
- Barnard, R., 2014. English Medium Instruction in Asian universities: Some concerns and a suggested approach to dual-medium instruction. *Indonesian Journal of Applied Linguistics*, 4(1).
- BC Non-Profit Housing Association, 2004. *Building Effective Partnerships*, s.l.: BC Non-Profit Housing Association.
- Beine, M., Docquier, F. & Rapoport, H., 2001. Brain drain and economic growth: theory and evidence. *Journal of Development Economics*, 64(1), pp. 275-289.
- Blackstone, A., 2012. Inductive or Deductive? Two Different Approaches. In: *Principles of Sociological Inquiry: Qualitative and Quantitative Methods*. s.l.: Flat World Knowledge.

- Blanchet, K. & Patel, D., 2012. Applying principles of health systems strengthening to eye health. *Indian Journal of Ophthalmology*, 60(5), pp. 470-474.
- Bloom, D. & Canning, D., 2000. The Health and Wealth of Nations. *Science*, 287(5454), pp. 1207-1209.
- Bloom, D. E., 2005. *Education, health and development*, s.l.: American Academy of Arts and Science.
- Bourne, L., 2010. *Stakeholder Relationship Management*. Rio de Janeiro, Stakeholder Management Pty Ltd.
- Bourne, R., Stephens, G., White, R., Smith, J., Flaxman, S., Price, H., Jonas, J., Keeffe, J., Leasher, J., Naidoo, K., Pesudovs, K., Resnikoff, S. & Taylor, H., 2013. Causes of vision loss worldwide, 1990–2010: a systematic analysis. *Lancet Global Health*, 1(6), pp. 339-49.
- Bradshaw, T. K., 2000. Complex community development projects: collaboration, comprehensive programmes, and community coalitions in complex society. *Community Development Journal*, 35(2), pp. 133-145.
- Brautigum, D. & Knack, S., 2004. Foreign Aid, Institutions, and Governance in Sub-Saharan Africa. *Economic Development and Cultural Change*, 52(2), pp. 255-285.
- Breckenridge, J., 2009. Demystifying theoretical sampling in Grounded Theory Research. *Grounded Theory Review*, 8(2).
- Brevard, R., Reid, C. & Morcos, N., 2009. *Lack of Project Plan Resulted in Transition and Contractor Performance Problems for the Institutional Controls Tracking System*, Washington, D.C.: U.S. Environmental Protection Agency.
- Brown, C., 2014. *Reflections on the Common Good*, Emporia: Emporia State University.
- Buchanan, D. & Huczynski, A., 1997. *Behaviour: An Introductory Text*. s.l.:Prentice Hall.
- Burnard, P. et al., 2008. Analysing and presenting qualitative data. *British Dental Journal*, 204(8), pp. 429-432.
- Busiinge, C., 2010. *The Impact of Donor Aided Projects Through NGOs on the social and economic welfare of the rural poor. What do donors want. Case study: Kabarole Research and Resource Centre*, Kampala: Uganda Martyrs University.
- Business Dictionary , 2015. *Systems Analysis*. [Online]
Available at: <http://www.businessdictionary.com/definition/systems-analysis-SA.html>
[Accessed 14 November 2015].
- Cambridge University Press, 2015. *Cambridge Dictionaries Online*. [Online]
Available at: <http://dictionary.cambridge.org/dictionary/english/framework>
[Accessed 8 November 2015].
- Carnwell, R. & Carson, A., 2008. The concepts of partnership and collaboration. In: R. Carnwell & J. Buchanan, eds. *Effective practice in health, social care and criminal justice*. London: McGraw-Hill Education, pp. 1-21.

- Carroll, C., 2013. *Six Sigma for Powerful Improvement*. Boca Raton: CRC Press.
- Cavaye, J., 2001. Rural Community Development. *The Journal of Regional Policy Analysis*, 31(2), pp. 109-124.
- Center for Disease Control and Prevention, 2015. *Programme Evaluation*. [Online] Available at: <http://www.cdc.gov/eval/> [Accessed 21 February 2015].
- Center for Disease Control and Prevention, 2009. *Evaluation*. [Online] Available at: www.cdc.gov/healthyyouth/evaluation/pdf/brief18.pdf [Accessed 2 March 2015].
- Chambers, R., 1995. Poverty and livelihoods: whose reality counts?. *Environment and Urbanization*, 7(1), pp. 174-204.
- Chan, V. et al., 2015. Student Educational Experiences, Perceptions and Expectations towards Optometry: An Emerging Eye Health Profession in Mozambique. *Optometric Education*, 40(2), pp.
- Checkland, P., 1981. *Systems Thinking, Systems Practice*. Chichester, UK: John Wiley.
- Chen, L. et al., 2004. Human Resources for Health: Overcoming the crisis. *The Lancet*, Volume 364, pp. 1984-90.
- Clifford, K. & Zaman, M., 2016. Engineering, global health, and inclusive innovation: focus on partnership, system strengthening, and local impact for SDGs. *Global Health Action*, 9(30175) <http://dx.doi.org/10.3402/gha.v9.30175>).
- Coleman, A., Yu, F., Keeler, E. & Mangione, C., 2006. Treatment of uncorrected refractive error improves vision-specific quality of life. *Journal of the American Geriatric Society*, 54(6), pp. 883-890.
- Coleman, H., 2011. The English Language in Development. *Mextesol Journal*, 35(1).
- Cooley, A. & Ron, J., 2002. The NGO scramble: Organizational Insecurity and the Political Economy of Transnational Action. *International Security*, 5-39.27(1).
- Crawford, G., 2003. Partnership or Power? Deconstructing the “Partnership for Governance Reform” in Indonesia. *Third World Quarterly*, 24(1), pp. 139-159.
- Dandona, R. & Dandona, L., 2001. Refractive Error Blindness. *Bulletin of the World Health Organisation*, 79(3), pp. 237-243.
- Dandona, R. & Dandona, L., 2001. Socio-economic status and blindness. *British Journal of Ophthalmology*, Volume 85, pp. 1484-1488.
- Davies, P., 2006. *The SAGE Dictionary of Social Research Methods*. s.l.:SAGE Publications.
- De Souza, N., Cui, Y., Looi, S., Paudel, P., Shinde, L., Kumar, K., Berwal, R., Wadhwa, R., daniel, V., Flanagan, J. & Holden, B., 2012. The role of optometrists in India: An integral part of an eye health team. *Indian Journal of Ophthalmology*, 60(5), pp. 401-405.

DeFillippi, R. & Arthur, M., 2002. Paradox in project-based enterprise: The case of Film making. In: J. Henry & D. Mayle, eds. *Managing Innovation and change*. London: Sage Publications, pp. 189-202.

Di Vinadio, T., Sinha, P. & Sachdeva, P., 2012. *Strengthening inclusive ownership through capacity development*, Washington: World Bank.

Diallo, A. & Thuillier, D., 2004. The success dimensions of international development projects: the perceptions of African project coordinators. *International Journal of Project Management*, 22(1), pp. 19-31.

Dublin Institute of Technology, 2012. *Human Resource Development for Eye Health Announcement*. [Online]

Available at: <http://www.dit.ie/eshi/news/ehsisecures422088irishaidfunding/>
[Accessed 19 June 2015].

Du Toit, R., Faal, H., Etya'ale, D., Wiafe, B., Mason, I., Graham, R., Bush, S., Methenge, W. & Courtright, P., 2013. Evidence for integrating eye health into primary health care in Africa: a health systems strengthening approach. *BMC Health Services Research*, 13(102), pp. 1-15.

Efenkwe, G., 2013. Educational development in Nigeria: Challenges and Prospects in the 21st Century. *Universal Journal of Education and General Studies*, 2(1), pp. 7-14.

Ehrenfeld, D., 2004. *Foreign Aid Effectiveness, Political Rights and Bilateral Distribution*, s.l.: The Journal of Humanitarian Assistance.

Ekanayake, E. & Chatrna, D., 2010. The effect of foreign aid on economic growth in developing countries. *Journal of International Business and Cultural Studies*, Volume 1, pp. 140-155.

Eliot, S., 2010. *Taking Notes vs. Recording interviews*. [Online]
Available at: <http://www.qualitative-researcher.com/interviews/taking-notes-instead-of-recording-the-interview/>
[Accessed 14 October 2015].

Elliot, R. & Timulak, L., 2005. Descriptive and interpretive approaches to qualitative research. In: J. Miles & P. Gilbert, eds. *A Handbook of Research Methods for Clinical and Health Psychology*. Oxford: Oxford University Press, pp. 147-159.

Ellis, P., 2013. *Understanding Research for Nursing Students*. Second ed. London: SAGE Publications.

Erlingsson, C. & Brysiewicz, P., 2013. Orientation among multiple truths: An introduction to qualitative research. *African Journal of Emergency Medicine*, Volume 3, pp. 92-99.

Etya'ale, D., 2011. *The difference between Aid and Development* [Interview] (24 June 2011).

Evaluation Toolbox, 2010. *What is evaluation*. [Online]
Available at:
http://evaluationtoolbox.net.au/index.php?option=com_content&view=article&id=11&Itemid=17
[Accessed 21 February 2015].

- Forbes, H. & Strother, R., 2004. Collaboration: Integrating education and clinical practice: the case of La Trobe University/The Alfred Clinical School of Nursing. *Contemporary Nursing*, 17(1-2), pp. 3-7.
- Foster, A., 2004. The policy-practice gap: supporting national VISION 2020 action plans. *Community Eye Health Journal*, 17(51), pp. 35-36.
- Fowler, A., 2000. Beyond Partnership: Getting Real about NGO Relationships in the Aid System. *IDS Bulletin*, 31(3), pp. 1-13.
- Fox, W. & E, V. R., 2004. *The Quest for Sustainable Development*. Cape Town: Juta and Company (Ltd).
- Fricke, K., 2012. What the comprehensive economics of blindness and visual impairment can help us understand. *Indian Journal of Ophthalmology*, 60(5), pp. 406-410.
- Fricke, T., Holden, B., Wilson, D., Schlenther, G., Naisoo, K., Resnikoff, S. & Frick, K., 2012. Global cost of correcting visual impairment from uncorrected refractive error. *Bulletin of the World Health Organisation*, 90(10), pp. 728-38.
- Girvan, N., 2007. *Power Imbalances and Development Knowledge*. Wilton Park, The North-South Institute.
- Gittinger, J. P., 1984. *Economic Analysis of Agricultural products*. 2nd ed. Washington , D.C.: The World Bank.
- Glaser, B., 2002. Constructivist Grounded Theory?. *Forum: Qualitative Social Research*, 3(3).
- Glaser, J. & Laudel, G., 2013. Life with and without coding: Two Methods for Early-Stage Data Analysis in Qualitative Research Aiming at Causal Explanations. *Forum for Qualitative Social Research*, 14(2).
- Glasgow, R., Vogt, T. & Bowls, S., 1999. Evaluating the Public Health Impact of Health Promotion Interventions: The RE-AIM Framework. *American Journal of Public Health*, 89(9), pp. 1322-1327.
- Glazer, G., Alexandre, C. & Reid Ponte, P., 2008. Legislative: Partnership or Collaboration: Words Matter. *The Online Journal of Issues in Nursing*, 13(2).
- Global Health Workforce Alliance, 2013. *Mid-level health workers for delivery of essential health services: a global systematic review and country experiences*, s.l.: World Health Organisation.
- Gogate, P., Gilbert, C. & Zin, A., 2011. Severe Visual Impairment and Blindness in Infants: Causes and Opportunities for Control. *Middle East African Journal of Ophthalmology*, 18(2), pp. 109-114.
- Halloway, R., 1969. Purpose of and Objections to Development Aid. *Intereconomics*, 4(4), pp. 126-129.
- Harzing, A.-W. & Feely, A. J., 2007. *The Language Barrier and its Implications for HQ-Subsidiary Investment*. [Online]
Available at: <http://www.harzing.com/download/langbarrier2.pdf>
[Accessed 22 April 2015].
- Haughey, D., 2011. *Projectsmart: Understanding the Project Management triple constraint*. [Online]
Available at: <http://www.projectsmart.co.uk/understanding-the-project-management-triple->

[constraint.php](#)

[Accessed 18 April 2015].

Heylighen, F. & Joslyn, C., 1992. *What is Systems Theory?*, Cambridge: Cambridge University Press.

Heyneman, S., 2005. Foreign Aid to Education: Recent U.S. Initiatives - Background, Risks and Prospects. *Peabody Journal of Education*, 80(1), pp. 107-119.

Hobbes, M., 2014. *Stop trying to save the world: Big ideas are destroying international development*. [Online]

Available at: <https://newrepublic.com/article/120178/problem-international-development-and-plan-fix-it>

[Accessed 27 December 2015].

Holden, B., 2007. Uncorrected refractive error: the major and most easily avoidable cause of vision loss. *Community Eye Health*, 20(63), pp. 37-39.

Holden, B., Fricke, T., Ho, S., Wong, R., Schlenther, G., Cronje, S., Burnett, A., Papas, E., Naidoo, K. & Frick, K., 2008. Global visual impairment due to uncorrected presbyopia. *Archives of Ophthalmology*, 126(12), pp. 1731-1739.

Holden, B. & Resnikoff, S., 2002. The Role of Optometry in Vision 2020. *Journal of Community Eye Health*, 15(43), pp. 33-36.

Holliday, A., 2002. *Doing and Writing Qualitative research*. London: Sage Publications.

Honorati, M. & McArdle, T., 2013. *The Nuts and Bolts of Designing and Implementing Training Programmes in Developing Countries*, Washington: The World Bank.

Houghton Mifflin, 2013. *American Heritage Dictionary*. 5th ed. s.l.:Houghton Mifflin Harcourt Publishing Company.

Ho, V. H. & Schwab, I. R., 2001. Social economic development in the prevention of global blindness. *British Journal of Ophthalmology*, Volume 85, pp. 653-657.

Hsiung, P., 2010. *Lives ad Legacies: A Process of Reflection*. [Online]

Available at: <http://www.utoronto.ca/~pchsiung/LAL/reflexivity>

[Accessed 7 November 2015].

Hughes, J. & Niewenhuis, L., 2005. *A Project Manager's Guide to Evaluation*. Volume 1 ed. Bremen: s.n.

Hulshof, C., Verbeek, J., van Dijk, F., van der Weide, W. & Braam, I., 1999. Evaluation research in occupational health services: General principles and a systematic review of empirical studies. *Occupational and Environmental Medicine*, Volume 56, pp. 361-377.

Husainzada, R., 2007. Situation analysis of human resources in eye care in Afghanistan. *Community Eye Health*, 20(61), p. 12.

Hutton, G., 2012. *Global costs and benefits of drinking-water supply and sanitation interventions to reach MDG coverage*, Geneva: World Health Organization.

IAPB, 2013. *IAPB Africa Report*, Bangkok: International Agency for the Prevention of Blindness.

- Ilal, A. & Kleibl, T., 2014. *Mozambique Eyecare Programme Evaluation report*, s.l.: s.n.
- Index Mundi, 2016. *Mozambique demographics profile 2016*. [Online]
Available at: http://www.indexmundi.com/mozambique/demographics_profile.html
[Accessed 18 November 2016].
- International Agency for the Prevention of Blindness, 2014. *Draft Terms of Reference for a Situational Analysis of the Eye Health Workforce in PALP*. s.l.:s.n.
- International Agency for the Prevention of Blindness, n.d. *Vision 2020*. [Online]
Available at: <http://www.iapb.org/collaboration/vision2020>
[Accessed 1 March 2016].
- International Conference on Primary Health Care., 1978. *Declaration of Alma-Ata*. Alma-Ata, s.n., pp. 1-3.
- International Council of Ophthalmology, 2010. *The Global Economic Cost of Visual Impairment*. [Online]
Available at: www.icoph.org/resources/146/The-Global-Cost-of-Visual-Impairment.html
[Accessed 2 March 2015].
- International Dialogue on Peacebuilding and Statebuilding, 2010. *A new vision for peacebuilding and statebuilding*. Timor-Leste, International Dialogue on Peacebuilding and Statebuilding.
- International Finance Corporation, 2015. *Health and Education*. [Online]
Available at:
http://www.ifc.org/wps/wcm/connect/industry_ext_content/ifc_external_corporate_site/industries/health+and+education
[Accessed 21 April 2015].
- CUPE International, 2016. *Scope Creep*, London: CUPE Limited.
- Irish Aid, 2006. *PSC between Irish Aid and Higher Education and Research Institutes 2007-2011*. [Online]
Available at:
<https://www.irishaid.ie/media/irishaid/allwebsitemedia/20newsandpublications/publicationpdfsenglish/psc-between-irish-aid-and-higher-education-and-research-institute-2007-2011-strategy.pdf>
[Accessed 3 March 2015].
- Jaggernath, J., Overland, L., Ramson, P., Kovai, V., Chan, V. & Naidoo, K., 2014. Poverty and Eye Health. *Health*, Volume 6, pp. 1849-1860.
- Jameson, D., Breman, J., Measham, A., et al, 2006. *Disease Control Priorities in Developing countries*. 2nd ed. Washington: World Bank.
- Janghorban, R., Roudsari, R. & Taghipour, A., 2014. Skype interviewing: the new generation of online synchronous interviewing in qualitative research. *International Journal of Qualitative studies on Health and Well-being*, Volume 9.
- Joseph, V., West, R., Shickle, D., Keen, J. & Clamp, S., 2011. Key challenges in the development and implementation of telehealth projects. *Journal of Telemedicine and Telecare*, 7(2), pp. 71-77.

- Kawulich, B., 2005. Participant Observation as a Data Collection Method. *Forum: Qualitative Social Research*, 6(2).
- Kerzner, H., 2013. *Project Management: A Systems Approach to Planning, Scheduling, and Controlling*. 11 ed. New Jersey: Wiley.
- Killick, T., Castel-Branco, C. & Gerster, R., 2005. *Perfect Partners? The performance of Programme Aid Partners in Mozambique*, Maputo: s.n.
- Kohlbacher, F., 2006. The Use of Qualitative Content Analysis in Case Study Research. *Forum: Qualitative Social Research*, 7(1).
- Kusek, J. & Rist, C., 2004. *Ten steps to a results-based Monitoring and Evaluation System*. Washington DC: The World Bank.
- Kvale, S., 1996. *Interviews: An introduction to qualitative research interviewing*. Thousand Oaks, Ca: SAGE.
- Ladyman, J., Lambert, J. & Wiesner, K., 2013. What is a complex system?. *European Journal for Philosophy of Science*, Volume 3, pp. 33-67.
- Lancaster, C., 1999. Aid effectiveness in Africa: the unfinished agenda. *Journal of African Economies*, 8(4), pp. 487-503.
- Lancaster, C., 2008. *Foreign Aid: Diplomacy, Development, Domestic Politics*. Chicago: University of Chicago Press.
- Lansingh, V. & Eckert, K., 2013. VISION 2020: The Right to Sight in 7 Years?. *Medical Hypothesis, Discovery and Innovation Ophthalmology Journal*, 2(2), pp. 26-29.
- Launi, J., 1999. *The Data Administration Newsletter: Creating a Project Plan*. [Online] Available at: <http://www.tdan.com/view-articles/5266> [Accessed 18 April 2015].
- Lavery, J., 2007. *Ethical Issues in International Biomedical Research: A Casebook*. Oxford: Oxford University.
- Laviers, H., Omar, F., Jecha, H., Kassim, G. & Gilbert, C., 2010. Presbyopic Spectacle Coverage, Willingness to Pay for Near Correction, and the Impact of Correcting Uncorrected Presbyopia in Adults in Zanzibar, East Africa. *Investigative Ophthalmology and Visual Science*, 51(2), pp. 1234-1241.
- Leasher, J. & Pike, S., 2009. Optometry in the Americas. *Optometric Care within the Public Health Community*, p. 38.
- Lewis, D. & Kanji, N., 2009. *Non-Governmental Organisations and Development*. Oxon: Routledge.
- Littlewood, S., Ypinazar, V., Margolis, S., Scherpbier, A., Spencer, J. & Dornan, T., 2005. Early practical experience and the social responsiveness of clinical education: systematic review. *British Medical Journal*, pp. 331-387.
- Loughman, J., 2008. *Irish Aid Programme for Strategic Cooperation Phase II Application: MOZAMBIQUE COOPERATIVE OPTOMETRIC TRAINING SCHEME*., Dublin: s.n.

- Loughman, J., Nxele, L., Faria, C., Thompson, S., Ramson, P., Chinanyi, F. & Naidoo, K., 2015. Rapid Assessment of Refractive Error, Presbyopia and Visual Impairment and associated Quality of Life in Nampula, Mozambique. *Journal of Visual Impairment and Blindness*, Volume May-June, pp. 199-213.
- Lowndes, V. & Skelcher, C., 1998. The Dynamics of Multi-Organisational Partnerships: An analysis of changing modes of governance. *Public Administration*, Volume 76, pp. 313-333.
- Lusthaus, C., Adrien, M. & Perstinger, M., 1999. Capacity Development: Definitions, Issues and Implications for Planning, Monitoring and Evaluation. *Universalialia*, Volume 35.
- Machado, M., 2014. *Huffington Post*. [Online]
Available at: [http://www.huffingtonpost.com/mario-machado/the-privilege-of-doing-de_b_4832836.html?](http://www.huffingtonpost.com/mario-machado/the-privilege-of-doing-de_b_4832836.html?de_b_4832836.html)
[Accessed 23 March 2015].
- Mack, N. Woodson, C., MacQueen, K., Guest, G. & Namey, E., 2005. *Qualitative Research Methods: a data collector's field guide*. Research Triangle Park, North Carolina: Family Health International.
- Mandell, M., 1999. The impact of collaborative efforts: changing the face of public policy through networks and network structure. *Policy Studies Review*, Spring(16), pp. 14-17.
- Marmamula, S., Chandra Sekhar Ravuri, L., Boon, M. Y. & Khanna, R., 2013. Spectacle Coverage and Spectacles Use among Elderly Population in Residential Care in the South Indian State of Andhra Pradesh. *BioMed Research International*, 2013(Article ID 183502), p. 5.
- Maseko, L. et al., 2014. Factors that influence choice of placement for community service among occupational therapists in South Africa. *South African Journal of Occupational Therapy*, 44(1).
- Mathers, N., Fox, N. & Hunn, A., 1998. *Using Interviews in a research project*. Sheffield: The Trent Focus Group.
- Maxwell, J. C., 2014. *Good Leaders Ask Great Questions: Your Foundation for Successful Leadership*. s.l.:Center Street.
- Meads, C. & Hyde, C., 2003. What is the cost of blindness?. *British Journal of Ophthalmology*, 87(10), pp. 1201-1204.
- Merriam Webster Dictionary, n.d. *Collaborate*. [Online]
Available at: <http://www.merriam-webster.com/dictionary/collaborate>
[Accessed 19 December 2015].
- Metcalf, J., 2010. *Blindness, Poverty and the Millenium Development Goals*, London: International Agency for the Prevention of Blindness.
- Michie, F., Glachan, M. & Bray, D., 2001. An Evaluation of Factors Influencing the Academic Self-concept, Self-esteem and Academic Stress for Direct and Re-entry Students in Higher Education. *Educational Psychology: An International Journal of Experimental Educational Psychology*, 21(4), pp. 455-472.
- Mikre, F., 2011. The Roles of Information Communication Technologies in Education. *Ethiopian Journal of Education and Science* , 6(2).

Ministerio Da Saude, 2007. *National Plan for Ophthalmology 2007-2010*. Maputo: Republica de Mozambique.

Ministry of Health Mozambique, 2012. *Situational Analysis: Eye Care*, Maputo: s.n.

Minto, H., 2008. Optometry in Developing Countries. *Optometry and Vision Science*, 85(2), pp. 74-77.

Montelpare, W., Biden, E., Lee, P., Sheps, S., Dubois, C. & Brault, I., 2008. The Future of Regional Training Centres: Planning for Sustainability. *Healthcare Policy*, Special Issue, pp. 131-140.

Moodley, V., 2015. *Experiences of the Multiple Entry and Exit Model in Malawi* [Interview] (12 February 2015).

Moodley, V., 2015. *Integrating new health science cadres into a health system* [Interview] (5 March 2015).

Moore, M., 2005. *Development's Language barrier*. [Online]
Available at: <http://www.theguardian.com/education/2005/nov/18/tefl>
[Accessed 22 April 2015].

Moyo, D., 2009. *Why Foreign Aid is hurting Africa*. [Online]
Available at: <http://www.wsj.com/articles/SB123758895999200083>
[Accessed 16 March 2015].

Mozambique Eye Health Advocacy Group, 2014. *Primary Eye Care integrated into Primary Health care in Mozambique: human resources, service delivery and community mobilization*. Nairobi: HelpAge International.

Mukasa, S., 1999. *Are expatriate staff necessary in international development NGOs? A case study of an international NGO in Uganda*, London: Centre for Civil Society: London School of Economics and Political Science.

Munyaradzi, M. & Rambe, P., 2013. *Leveraging Educational Quality in Southern African Educational Systems*. Bamenda: Langaa RPCIG.

Murthy Gudlavalleti, V., Allagh, K. & Gudlavalleti, A., 2014. Self-adjustable glasses in the developing world. *Clinical Ophthalmology*, Volume 8, pp. 405-413.

Naidoo, K., 2000. Towards a new model in Optometric Education. *Optometric Education*, 26(2), pp. 59-61.

Naidoo, K., Gichuci, S., Basanez, M., Flaxman, S., Jonas, J., Keeffe, J., Leasher, J., Pesudivs, K., Price, H., Smith, J., Turner, H., White, R., Wong, T., Resnikoff, S., Taylor, H., Bourne, R., 2014. Prevalence and causes of vision loss in sub-Saharan Africa: 1990-2010. *British Journal of Ophthalmology*, 98(5), pp. 612-618.

Naidoo, K. & Jaggernath, J., 2012. Uncorrected Refractive Errors. *Indian Journal of Ophthalmology*, 60(5), pp. 432-437.

- Naidoo, K., Jaggernath, J., Martin, C., Govender, P., Chinanayi, F., Chan, V. & Ramson, P., 2013. Prevalence of presbyopia and spectacle coverage in an African population in Durban, South Africa. *Optometry and Vision Science*, 90(12), pp. 1424-9.
- Naidoo, K., Raghunandan, A., Mashige, K., Govender, P., Holden, B., Pokharel, G. & Ellewein, L., 2003. Refractive Error and Visual Impairment in African Children in South Africa. *Investigative Ophthalmology and Vision Science*, 44(9), pp. 3764-3770.
- Naidoo, K., The Challenge of Uncorrected Refractive Error: Driving the agenda of the Durban Declaration on refractive error and service development. *Clinical and Experimental Optometry*, 93(3), pp. 131-6.
- Norman, N., 2012. *An investigation into the reasons for failure of community-based projects in Folvhodwe, Limpopo*. s.l.:University of South Africa.
- Ntim-Amponsah, 2007. Contribution of Refractive Errors to Visual Impairment in Patients at Korle-Bu Teaching Hospital. *Ghana Medical Journal*, 41(2), pp. 68-71.
- Nzau-Muteta, G. J. & N'guessan, 2005. *Community development support project in the Kayes and Koulikoro Regions (PADEC)*. Bamako: Mali: Department of Social Development Central and West Region.
- Oduntan, O., Mashige, K., Kio, F. & Boadi-Kusi, S., 2014. Optometric Education in Africa: Historical perspectives and challenges. *Optometry and Vision Science*, 91(3), pp. 359-365.
- OECD, 2006. *Successful Partnerships: A guide*, Vienna: OECD Forum for Partnerships and Local Governance.
- OECD, 2015. *Paris Declaration and Accra Agenda for Action*. [Online]
Available at: <http://www.oecd.org/dac/effectiveness/parisdeclarationandaccraagendaforaction.htm>
[Accessed 26 November 2015].
- Osborne, S., 2002. *Public-Private Partnerships: Theory and Practice in International Perspective*. London: Routledge.
- Overseas Development Institute, 2011. *The role of the private sector in development*. [Online]
Available at: <http://www.odi.org/comment/5396-role-private-sector-development>
[Accessed 27 December 2015].
- Oyeshola, D., 2007. Development and Poverty: A Symbiotic Relationship and its Implication in Africa. *African Journal of Traditional, Complementary and Alternative Medicine*, 4(4), pp. 553-558.
- Padilla, M. & Di Stefano, A., 2009. A Snapshot of Optometry around the world. *Review of Optometry*, 15 June, 146(6).
- Palagyi, A., Franzco, G. & Ramke, J., 2010. Training and using mid-level eye care workers: early lessons from Timor-Leste. *Clinical and Experimental Ophthalmology*, 38(8), pp. 805-811.
- Parker, A. & Tritter, J., 2006. Focus group method and methodology: current practice and recent debate. *International Journal of Research and Method in Education*, 29(1), pp. 23-37.

PATH, 2014. *The Role of Research and Innovation for Health in the post-2015 Development Agenda: Bridging the Divide between the Richest and Poorest within a Generation*, Washington, D.C.: Global Health Technologies Coalition.

Patton, M. Q., 1990. *Qualitative evaluation and Research Methods*. 2nd ed. Thousand Oaks, CA: Sage Publications, Inc..

Pearce, M., 2012. Addressing refractive error visual impairment: Volunteer organisations alignment with Vision 2020 and public health principles. *Clinical and experimental optometry*, 95(6), pp. 583-589.

Pfeiffer, J., 2003. International NGOs and primary health care in Mozambique: the need for a new model of collaboration. *Social Science and Medicine*, 56(4), pp. 725-738.

Pfisterer, S., 2013. *Development partnerships with the private at work: Insights from partnerships with the private sector facilitated by the Dutch embassy in Colombia*, Rotterdam: Partnerships Resource Centre.

Phillipson, R., 1992. *Linguistic Imperialism*. Oxford: Oxford University Press.

Phipps, S., 2003. *The Impact of Poverty on Health: A Scan of Research Literature*, Ottawa: Canadian Institute for Health Information.

Pinaud, N., 2007. *Public Private Dialogue in Developing Countries: Opportunities and Risks*. Danvers: OECD Development Centre.

Pithers, R. & Lim, R., 1997. A non-english-speaking background in adult vocational training: breaking through the barriers. *Journal of Vocational Education and Training*, 49(4), pp. 531-544.

Posavac, E. J. & Carey, R. G., 1997. *Programme evaluation: methods and case studies*. 5th ed. Englewood Cliffs, NJ: Prentice-Hall, Inc..

Powell, R., 2006. Evaluation Research: An Overview. *Library Trends*, 55(1), pp. 102-120.

Prasad, N., 2005. Thoughts on establishing mid-level ophthalmic personnel for Vision 2020 in India. *Community Eye Health Journal*, 18(55), p. 112.

Project Smart, 2016. *Managing Scope Creep - Don't gold plat my project!*, s.l.: Project Smart.

Quade, E. & Boucher, W., 1968. *Systems analysis and policy planning: Applications in defence*. New York: Elsevier.

Reichert, J., 2010. Abduction: The Logic of Discovery of Grounded Theory. *Forum: Qualitative Social Research*, 11(1).

Rein, D., Zhang, P., Wirth, K., Lee, P., Hoerger, T., McCall, N., Klein, R., Tielsch, J., Vijan, S. & Saaddine, J., 2006. The Economic Burden of Major Adult Visual Disorders in the United States. *Socioeconomics and Health Services*, 124(12), pp. 1754-1760.

Resnikoff, S., Kocur, I., Etya'ale, D. & Ukety, T., 2008. Vision 2020 - The Right to Sight. *Annals of Tropical Medicine and Parasitology*, 102(Supplement 1), pp. 3-5.

- Resnikoff, S., Pascolini, D., Mariotti, S. & Pokharel, G., 2008. Global Magnitude of visual impairment caused by uncorrected refractive errors in 2004. *Bulletin of the World Health Organisation*, Volume 86, pp. 63-70.
- Richards, J., 2001. *Curriculum Development in language and teaching*. Cambridge: Press Syndicate of the University of Cambridge.
- Rist, G., 1999. *The History of Development: From Western origins to Global Faith*. Cape Town: University of Cape Town Press.
- Ritchie, M. & Chappidi, N., 2008. *Stakeholder Engagement Guidelines*. [Online]
Available at: https://www.projects.ed.ac.uk/webfm_send/127
[Accessed 30 05 2016].
- Robertson, A., Del Dehart, D., Tolle, K. & Heckerman, D., 2009. Healthcare Delivery in Developing countries: Challenges and Potential Solutions. In: T. Hey, S. Tansley & K. Tolle, eds. *The Fourth Paradigm*. Redmond: Microsoft Research, p. 284.
- Roller, M. & Lavrakas, P., 2015. *Applied Qualitative Research Design: A Total Quality Framework Approach*. s.l.:Guilford Press.
- Rondinelli, D., 2004. *PARTNERING FOR DEVELOPMENT: GOVERNMENT-PRIVATE SECTOR*. [Online]
[Accessed 27 December 2015].
- Rosenstein-Rodan, 1961. International Aid for Underdeveloped countries. *The Review of Economics and Statistics*, 63(2), pp. 107-138.
- Samuels, K., 2006. *Rule of law reform in post-conflict countries : operational initiatives and lessons learnt*, Washington, D.C.: World Bank.
- Sass, S., Dalal-Clayton, B. & Pretty, J., 1995. Participation in Strategies for Sustainable development. *Environmental Planning Issues*, Volume 7.
- Satzinger, J., Jackson, R. & Burd, S., 2012. *Systems Analysis and Design in a changing world*. Sixth ed. Boston: Course Technology.
- Save the Children Ethiopia, 2014. *Ethiopia Humanitarian Aid*. [Online]
Available at:
http://www.savethechildren.org/site/c.8rKLIXMGIpI4E/b.6150299/k.7399/Ethiopia_Humanitarian_Aid.htm
[Accessed 9 April 2015].
- Schultz, J. et al., 2011. Experiences and challenges in implementing complex community-based research projects: the Pacific Obesity Prevention in Communities project. *Obesity Reviews*, 12(2), pp. 12-9.
- Sewell, M., 2015. *The use of qualitative interviews in evaluation*, Tucson: s.n.
- Shah, K. & Loughman, J., 2012. *Evaluation of refraction skills and competencies of ophthalmic technicians: Providers of refractive services in Mozambique*. Dublin, European Academy of Optics and Optometry.

- Shah, K., Naidoo, K., Chagunda, M. & Loughman, J., 2015. Evaluations of refraction competencies of ophthalmic technicians in Mozambique. *Journal of Optometry*, p. 10.
- Shamanna, D., Dandona, L. & Rao, G., 1998. Economic burden of blindness in India. *Indian Journal of Ophthalmology*, Volume 46, pp. 169-72.
- Shamoo, A. & Resnik, B., 2003. *Responsible conduct of research*. Oxford: Oxford University Press.
- Shediac-Rizkallah, M. & Bone, L., 1998. Planning for sustainability of community-based health programmes: conceptual frameworks and future directions for research, policy and practice. *Health Education Research*, 13(1), pp. 87-108.
- Sheingate, A., 2008. *Agrarian Social Pacts and Poverty Reducation*, Geneva: United Nations Research Institute for Social Development.
- Smith, T. et al., 2009. Potential lost productivity resulting from the global burden of uncorrected refractive error. *Bulletin of the World Health Organisation*, Volume 87, pp. 431-437.
- Sofroniou, A., 2015. *Philosophy and Politics*. s.l.:Andreas Sofroniou.
- Stark, O., 2004. Rethinking the brain drain. *World Development*, 32(1), pp. 15-22.
- Stern, E., 2005. *Evaluation Research Methods*. s.l.:SAGE Publications Limited.
- Strauss, A. & Corbin, J., 1990. *Basics of qualitative research: grounded theory procedures and techniques*. Newbury Park, CA: SAGE Publications, Inc..
- Sumner, A. & Tribe, M., 2008. *International Development Studies: Theories and Methods in Research and Practice*. London: Sage Publications.
- Swanson, R., 2013. *Theory Building in Applied Disciplines*. San Francisco, CA: Berrett-Koehler Publishers.
- Tamas, A., 2000. *System Theory in Community Development*, Almonte, Ontario: s.n.
- Tango International, 2009. *Sustainability of rural development projects*, s.l.: International Fund for Agricultural Development.
- Teferra, D., 2015. *International Dimension of Higher Education in Africa: National Needs and Global Competitiveness*. Durban: University of KwaZulu Natal.
- The Partnerships Resource Centre, 2014. *Designing Partnership Agreements: An introduction to the Partnering Agreement Scorecard*. Rotterdam: Erasmus University.
- The Retirement Research Foundation, 2015. *Evaluation Guidelines: Implementation Evaluation*. [Online]
Available at: <http://www.rrf.org/resources/grant-resources/evaluation-guidelines/implementation-evaluation>
[Accessed 21 February 2015].
- Thomas, P., 2013. Challenges for participatory development in contemporary development practice. *Development Bulletin*, Volume 75.

Thompson, S., Loughman, J., Gonzalez-Alvarez, C., Naidoo, K., Chinanayi, F. & Harris, G., 2015. Barriers to the utilisation of refractive services in Mozambique. *Optometry and Vision Science*, 92(1), pp. 59-69.

Thompson, S., Naidoo, K., Harris, G., Bilotto, L., Ferrao, J. & Loughman, J., 2014. The development of a public optometry system in Mozambique: a Cost Benefit Analysis. *BMC Health Services Research*, Volume 14, p. 422.

Thylefors, B., 1998. The global initiative for the elimination of avoidable blindness. *American Journal of Ophthalmology*, 125(1), pp. 90-3.

U.S. Department of State: Office of the Historian, n.d. *MILESTONES: 1937–1945. The Formation of the United Nations 1945*. [Online]
Available at: <https://history.state.gov/milestones/1937-1945/un>
[Accessed 9 April 2016].

Unger, J., 2011. *Epistemology & Methods In Public Health*. [Online]
Available at: <http://www.jeanpierreunger.com/index.php/research/epistemology-methods-public-health>
[Accessed 10 October 2015].

United Nations Development Programme, 2010. *Leadership and Change in Post-onflict States: A Case Study in Liberia*, New York: UNDP.

United Nations Development Programme, 2014. *Human Development Report*. [Online]
Available at: http://hdr.undp.org/sites/all/themes/hdr_theme/country-notes/MOZ.pdf
[Accessed 8 March 2016].

United Nations Development Programme, 2016. *Sustainable Development Goals*. [Online]
Available at: <http://www.undp.org/content/undp/en/home/sustainable-development-goals.html>
[Accessed 7 December 2016].

United Nations Economic and Social Council, 2008. *Trends in south-south and triangular development cooperation*, Washington, DC: UN ECOSOC.

United Nations, 1981. *The Right to Self-Determination: Historical and Current development on the basis of United Nations Instruments*, New York: United Nations.

United Nations, 2012. *Mozambique Statistics*. [Online]
Available at: data.un.org/CountryProfile.aspx?crName=mozambique
[Accessed 2 March 2015].

University of North Carolina Board of Governors, 2014. *Study on the establishment of new optometry schools*, Chapel Hill: University of North Carolina.

University of Twente, 2010. *System Theory*. [Online]
Available at:
https://www.utwente.nl/cw/theorieenoverzicht/Theory%20clusters/Communication%20Processes/System_Theory/
[Accessed 14 November 2015].

University of Washington, n.d. *Programme Evaluation: Frequently asked questions*. [Online]
Available at: http://www.washington.edu/oea/services/research/programme_eval/faq.html
[Accessed 21 February 2015].

US Federal Government, n.d. *National Science Foundation*. [Online]
Available at: <http://www.nsf.gov/statistics/randdef/fedgov.cfm>
[Accessed 10 October 2015].

Verdant Consulting, 2010. *The importance of Effective Stakeholder Consultation*. [Online]
Available at: <http://www.continuityforum.org/content/news/blogs/verdant-consulting/1146>
[Accessed 28 December 2015].

Vermeulen, S. & Cotula, L., 2010. Over the heads of local people: consultation, consent, and recompense in large-scale land deals for biofuels projects in Africa. *Journal of Peasant Studies*, 37(4), pp. 899-916.

Vicsek, L., 2007. A scheme for analysing the results of focus groups. *International Journal of Qualitative Methods*, pp. 20-34.

Vieira, A., 2013. *Africa Review*. [Online]
Available at: <http://www.africareview.com/News/Equatorial-Guinea-to-join-Lusophone/-/979180/1860600/-/8cfr0tz/-/index.html>
[Accessed 4 March 2015].

Walker, S., 2012. *Effective Social Work with Children, Young People and Families: Putting Systems Theory into Practice*. s.l.:SAGE Publications.

Walters, J., 1982. Design training programmes in the developing world: Experience in Africa. *Performance & Instruction*, 21(6), pp. 26-29.

Weaver, P., 2010. *Understanding Programmes and Projects: Oh, there's a difference*. Melbourne, Project Management Institute.

Webster, 1999. *Webster's New World College Dictionary*. 5th ed. s.l.:Webster's New World.

Wikipedia, 2015. *United Nations*. [Online]
Available at: https://en.wikipedia.org/wiki/United_Nations
[Accessed 28 November 2015].

Wikipedia, 2016. *Nampula*. [Online]
Available at: <https://en.wikipedia.org/wiki/Nampula>
[Accessed 18 November 2016].

Williams, C., 2007. Research Methods. *Journal of Business & Economic Research*, 5(3), pp. 65-72.

Working Group 1 of the Commission on Macroeconomics and Health, 2002. *Health, Economic Growth, and Poverty Reduction*, Geneva: World Health Organisation.

World Bank, 2013. *Comprehensive Development Framework*. Washington, D.C.: World Bank.

World Bank, 2014. *Country Data*. [Online]
Available at: <http://data.worldbank.org/country>
[Accessed 8 March 2014].

World Bank, 2015. *Have the MDGs affected developing country policies and spending? Findings of new 50 country study*. [Online]
Available at: <http://blogs.worldbank.org/publicsphere/have-mdgs-affected-developing-country-policies-and-spending-findings-new-50-country-study>
[Accessed 30 November 2015].

World Council of Optometry, 2005. *A Global Competency Based Model of Scope of Practice in Optometry*. London: World Council of Optometry.

World Health Assembly, 2013. *Towards universal eye health: a global action plan 2014–2019*. Geneva, World Health Organisation.

World Health Organisation, 2000. *Media Centre: Control of Major Blinding Diseases and Disorders*. [Online]
Available at: <http://www.who.int/mediacentre/factsheets/fs214/en/>
[Accessed 1 March 2015].

World Health Organisation, 2012. *Global data on Visual Impairments 2010*, Geneva: World Health Organisation.

World Health Organization, 2000. *Media Centre: Control of Major Blinding Diseases and Disorders*. [Online]
Available at: <http://www.who.int/mediacentre/factsheets/fs214/en/>
[Accessed 1 March 2015].

World Health Organization, 2006. *World Health Report 2006 - Working together for Health*, Geneva: World Health Organization.

World Health Organization, 2014. *Visual Impairment and Blindness: Fact Sheet No. 282*. [Online]
Available at: <http://www.who.int/mediacentre/factsheets/fs282/en/>
[Accessed 2 March 2015].

World Health Organization, 2015. *Global Trends in the magnitude of blindness and visual impairment*, Geneva: World Health Organization.

Worley, P. & Nichols, A., 2001. *The Rural and Remote Area Placement Programme: Lessons learned in regional training delivery*. Canberra, 6th National Rural Health Conference.

Zhao, F. et al., 2013. Investing in human resources for health: the need for a paradigm shift. *Bulletin of the World Health Organisation*, Volume 91, p. 799–799A.

Ziebland, S. & McPherson, A., 2006. Making sense of qualitative data analysis: an introduction with illustrations from DIPEX (personal experiences of health and illness).. *Medical Education*, 40(5), pp. 405-14.

Zinsser, W., 2006. *On Writing Well*. 30th Anniversary ed. New York: Collins.

APPENDIX 2:

INTERVIEW GUIDE

DESIGN OF THE PROJECT

1. Describe the rationale for the project.
2. What was the strategy around the project model (design)?
3. What pre-planning assessments or were made to inform the project's design?
 - a. What factors of consideration led to the adoption of the *initial* project model?
4. What, if any, developmental considerations were made in the design or structure of the project?
5. Describe the funding model used in the implementation of the Project.
6. Was there sustainability planning in the overall project design? Explain.
7. What informed the design of the curriculum?
8. What pre-planning assessments were made in the design and structure of the initial curriculum?
9. Are there any factors you feel should have been taken into account in this process that was not?
10. Describe the process followed in getting the profession of optometry recognised by the relevant authorities.
11. What specific challenges were encountered in this process?
12. What, in your opinion could have been done differently to improve the efficiency of achieving this objective?

PARTNERSHIP:

1. Describe the structure of the partnership.
2. What was the strategy around the partnership approach?
3. Do you think that the partnership model was feasible / successful in achieving its desired objectives? Explain...
4. Would you recommend a different model? If yes, why?

5. Discuss the operational successes and/or failures of the partnership model. (*Includes Coordination, sharing of responsibilities, communication, etc.*)
 - a. Identify factors you feel worked successfully in the partnership that positively impacted the project's progress and its outcomes?
 - b. Identify specific challenges relating to the partnership structure that you may feel have negatively impacted the project's progress or success?
6. What partnership factors do you feel are core to collaborative projects being successful?
7. What were the individual Partnership benefits out of this project?
8. Do you feel that the partnership achieved its strategic objectives?
9. Any unplanned benefits out of the partnership?
10. What key lessons can be drawn from this collaboration that can benefit other future partnerships?

PROJECT PLANNING AND ROLL-OUT:

1. Describe the planning framework utilised in the development of the Project.
2. Was this an integrated process (include all partner, partner capabilities, resources)?
3. Identify specific challenges or barriers to the implementation process
 - a. To what would you attribute these challenges?
 - b. What strategies were adopted to address these challenges?
4. The project had a strong research agenda. What steps were taken to advance this research agenda?
5. What do you feel were the broad challenges encountered in driving the research agenda of the project?
6. Do you feel that there was adequate support from all partners in driving the research agenda? If not, can you cite any possible reasons for this?
7. Do you feel the local stakeholders understood the significance of the research agenda?
 - a. Was this well supported? Elaborate
8. Were there specific areas in the research component you feel could have been better supported by partners? Elaborate?
9. Were there deliberate capacity development efforts in terms of research for Mozambique / Unilurio? Explain

10. What specific / significant lessons can be learned from the MEP experience relating to delivering a research agenda as part of a development funded project?
11. Do you feel that Irish Aid's funding objectives were met in this regards? If not, implications for this?
12. Broadly speaking, Do you feel that external factors such as the social, political or economic environment within which the project was being implemented had any negative impact on the project's roll-out? Explain.
13. Do you feel that there was adequate political support from relevant authorities for the project?
 - a. If No, what would you cite as possible reasons for this lack of support?
 - b. If yes, what would you cite as the main reasons for the support.
14. Did any of the challenges encountered have the potential to impact the sustainability of the project? Explain.
15. Do you feel that there was adequate support from all partners?

Can you cite any possible reasons for the above?

 - a. What do you feel could have been done better to foster:
 - i. equal contributions from all partners
 - ii. A more conducive partnership
16. What specific / significant lessons can be learned from the MEP experience relating to:
 - a. Project / Curriculum Design
 - b. Partnership structures
 - c. Planning and General project implementation
17. Any additional comments?

APPENDIX 4

Timeline of event: MEP and the Development of Optometry

Activity	Date
Grant opportunity identified	2007
Coming together of key partners	2007- 2008
MEP launched	February 2009
1 st Optometry intake	2009
Optometry faculty recruited	2010
MEP became a member of MECC	2010
Postgraduate students recruited	2010
Establishment of teaching clinic	2011
Recognition of optometrists	2014-2015
Posts for first cohort optometrists within the health system	2015

APPENDIX 5

Framework Guide:

This framework was designed for use by organisations engaging in development work in optometry, specifically relating to the development of optometrists and as a new professional cadre within developing countries, as well as related, required service development inputs. A phased approach is recommended as outlined below:

PHASE 1: PROGRAM DESIGN [Pre-planning]

Several components need to be given consideration at the conceptual stage of the project. This first phase of is categorised as “program design”, and includes the following considerations:

1. Conducting a thorough situational analysis in the country / region of regard:

- a) Identify the local development, education and regulatory frameworks.
- b) What are the specific developmental challenges facing the country / region of regard?
- c) What is the extent of local capacity including human resource, physical infrastructure, and institutional / academic capacity? What are the specific, identified gaps?
- d) Scope the country / region for related programs. How will the new profession or program integrate with these related professions or programs?

- e) Review the local human resources for health (HRH) structure and relevant regulatory authorities and processes which may be relevant to integration for this new cadre.

2. *Conducting a through Stakeholder Analysis:*

The second component is to conduct a stakeholder analysis i.e. to identify who the individuals, institutions or organisations are who may have a direct or indirect interest, stake or benefit in / from the program? What level of engagement is required for each of these e.g. information purposes only, assistance with design of the program, advocacy, regulation, etc.?

PHASE 2: **PLANNING AND IMPLEMENTATION [Active Project Lifecycle]**

This phase follows the pre-planning, program design phase where the context and stakeholders have been scoped for planning purposes. Phase 2 is divided into 3 parts, each following consecutively through the implementation cycle of the project:

1. *Inputs [Year 1a]*

- a) Following the identification of stakeholders in phase 1, targeted advocacy and consultation should now begin, particularly with relevant government or regulatory entities.
- b) Based on the capacity and developmental challenges assessment, what risks have been identified?

- c) Engage with relevant professional, funding or development networks early on in the project to ensure that the program is benchmarked, has the necessary support, is appropriate to the local context and sustainable for the long term.
- d) What research is necessary to move the project forward? Formulate a research plan based on the local development needs. What research is desirable to help meet longer term needs? How do you capacitate the local partner/s to continue on a trajectory of research-led development solutions or evidence-based practice?
- e) Identify the comprehensive funding needs and potential sources of funding for the immediate and longer term development of the program.

2. *Processes [Years 1b]*

- a) Differentiate between partners, collaborators and stakeholders and the role of each in relation to the project. Which entities should form part of the core partnership? Any secondary entities or stakeholders who can play a more peripheral role in the delivery of the project and considered as collaborators?
- b) Identify the potential contributions from each identified partner. What should the specific roles and responsibilities of each partner be based on this and the capacity assessment? Draft a detailed partnership agreement and ensure that it is signed by all parties.
- c) Identify all the resources required for the project to be operationalised. What are the staffing needs - project, academic, institutional, administrative, etc.? Articulate roles, responsibilities and communication protocols for each in relation to the project.

- d) Identify faculty needs. If recruitment of expatriate staff is required (in the absence of any potential local faculty, identify the most appropriate country/ies from which to recruit in terms scope of practice, cultural similarity, contextual understanding, language, balance of potential skills and contributions, etc. Begin targeted recruitment for these faculty using strategic professional or development networks.
- e) Develop corporate branding material and begin executing a targeted publicity plan.
- f) Within the partnership, define how the project will be managed, as well as Standard Operating Procedures (SOPs) for project-related communication.
- g) Considering the local context and capacity, build all necessary sustainability considerations into the project plan.

3. *Outcomes*

This stage reflects the desired result of the project and its implementation activities towards achievement of the relevant development outcomes and the project's longer term impact.

- a) One of the main objectives will be to ensure that graduates are officially recognised in-country for absorption into the public health system, where this may be a specific, desired outcome. This requires regular advocacy and follow up with local entities.
- b) Ensure that posts for graduates have been created and funded within the structures of the public health system.

- c) Have regulatory structures been engaged on legislative requirements for oversight of the profession and practice of optometry, and are these systems in place?
- d) Have key local centres for development of the service been identified in collaboration with the local partner? These should be strategically located in areas of greatest need, and with potential to support the growing demand for services.
- e) Define processes for ongoing procurement of equipment and supplies, as well as maintenance of ophthalmic equipment.
- f) Identify individuals from the first cohort who can be groomed as future local faculty and/or leaders of the profession and ensure that capacity development and transfer of skills to these identified personnel takes place.
- g) Initiate research which will have a lasting impact in terms of development of the profession and service within the health system. Position research as a key driver of development, inculcating a culture of research which responds to local challenges.
- h) Processes for monitoring and evaluation of the project's activities should be pursued and the project evaluated to ensure that it meets its objectives, or that lessons learnt can inform future practices.

Application

The length of each phase would be dependent on the length of the funded project, which should be a minimum of five years in duration. The framework functions in an open system, therefore external factors such as the local political environment, socio-cultural dynamics or changing economic conditions both within the country

and those affecting project partners may dictate how or when certain decisions are made, as well as inform resource allocations or required amendments to the project plan in response to these external forces.